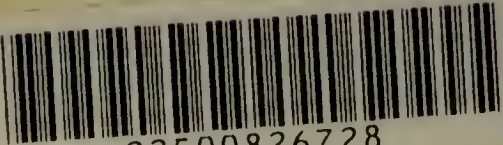


# THE PYONEX:

*Its Theory  
and Practice*

W. B. RULE

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# — The Pyonex —



# THE PYONEX

## Its Theory and Practice

BY

W. B. RULE, M.R.C.S., L.R.C.P.

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## PREFACE.

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FOR many years past I have been using the treatment which is described in the following pages, as a method of alleviating a great many forms of disease, with singularly beneficial results. It was first introduced to my notice while residing abroad, and I may frankly state, that being much occupied at the time with a general practice, I did not take the trouble to look into the matter, more especially inasmuch as the process of cure which was claimed for it varied so much from the general lines of medical therapy. I treated it, as most of my medical brethren would have done, as a subject of small import. But after the lapse of some months, when I was suffering from chronic dysentery, which utterly refused to yield to any treatment, I was induced, partly out of curiosity, and partly by certain assurances which were made, to try the effect of an application over the abdomen.

I was quite unprepared for the prompt relief which followed. In fact, every dysenteric symptom vanished from the time that the application was made. But when I saw the extraordinary crop of pustules which resulted from the treatment, I ceased to have any surprise that the strong medicines I had been using, had failed to produce the desired result, and came to the conclusion that nothing short of the withdrawal of the toxic purulent matter from the intestines could have produced such a metamorphosis.

These results led me to make investigations as to the further advantages which were claimed for the treatment, and I have endeavoured to set forth such advantages, as clearly as possible, in the following pages.

I understand that the plan of treatment had its origin in Prussia a great many years ago, and that it has been in use, in solitary instances, in most of the countries of the world. But no one seems to have discovered the scientific claims which are now made for it, nor can I gather that there has ever been set forth in type a proper description or its method of operation.

I have, during many years, made thousands of applications, in multiform pathogenic cases, and am compelled to admit that, in an immense number of these, results have been obtained which are not possible, by the administration of medicine alone.

Only by patient examination, which has extended over many years, have I been able to discover the many phases which are involved in the operation of the treatment. The frequent use of the microscope has been of great service in unfolding various enigmatical circumstances which otherwise could not have been effected ; and it would appear that further histological investigation may provide for the medical world a new and great field, whereby a more accurate knowledge may be obtained, not only of the exciting cause of disease, but also of most reasonable methods of combating it.

It is a source of satisfaction to be able to state that an accurate knowledge of the therapeutic system we are now dealing with, sheds such light on the cause and rational treatment of a vast number of the graver ailments, as may raise the practitioner from the present level, in which he feels that his diagnosis and treatment savour so strongly of empiricism, to a higher platform, from whence he can contemplate the exact exciting cause of the ailment, and adopt the most effective measures which may effect a cure. The main novelty of this comparatively unknown treatment may be summed up by stating that the *actual exciting cause* of a given disease, when discovered, is quickly expelled, *in toto*, from its habitat in the component tissues of the

human frame, and that, as a natural result, the symptoms of the said disease disappear. It is not intended to assert, that an eliminative treatment is a novelty in therapeutics, such as for example, an issue, as it used to be applied; or diaphoresis, whether effected by means of medicine, exercise or Turkish bath; or continuous purgation. Every-day experience familiarises us with such measures. But the special claim made for the Pyonex Treatment is, that when compared to any of the above methods, it proves itself to be far more effective, and produces unheard-of results, which are of a most satisfactory nature. In cases where ailments are of a chronic nature, the treatment is a most valuable adjunct to the administration of medicines. But when we consider its prophylactic powers, its advantages are so great that we can scarcely over-estimate them. Long experience tends to show that pernicious and exanthematous fevers, as well as the long list of ailments which result from the infiltration of toxic elements in the tissues, may, with few exceptions, be nipped in the bud, when such cases are taken in hand at their inception. The same statement may also be made with regard to gout, rheumatic affections, and such chest affections as involve the bronchial tubes.

I do not overlook the fact that I am here making statements of very broad significance. But I may plead in justification that not theory, but practice, has furnished the bases which have led to such conclusions. Many other allusions might be made in this Preface but space forbids. There are several affections which I have had no opportunity of treating, where the adoption of the treatment would doubtless be attended by the best results.

In the thousands of applications which I have given, I have had ample opportunity of carefully watching its effects. I have examined it theoretically, and have also compared its results to those which are obtainable by other modes of treatment.



My researches compel me to draw the following conclusions :—

1. That results are obtainable by it, which are superior to those which can be effected by any other known method of treatment.
2. That it acts as a specific in some of the more serious ailments, that are to be found in the catalogue of diseases.
3. It will effect a cure in several affections which are considered to be incurable :—Among these may be mentioned, Asthma, Rheumatism, Gout, Paralysis, Rheumatoid Arthritis, Locomotor Ataxia, Diabetes, Skin Diseases, &c., &c.
4. It will relieve chest affections, such as Pneumonia, Bronchitis, Pharyngitis and Laryngitis, when far advanced, and all hope is lost. But if applied at the commencement of the attack it cuts it short promptly.
5. While its cures are of a radical nature, they do not occupy an unreasonable time.
6. Its application is unaccompanied by pain or danger.

The Instrument used in the Treatment is named the Pyonex. It is derived from the Greek *πύον*—pus, and *ἐξ*—out of, and is intended to convey the signification of pus expeller.

I must now commit my work to the patient consideration of my medical brethren, in the humble confidence that they may discover more advantages in the adoption of the treatment than I have been able to set forth herein.

It has long been my earnest prayer to our Almighty Father, whose I am, and in whose presence I shall soon appear, that the days devoted to this work might be sanctified, and that in His hands it might be a blessing to the human race.

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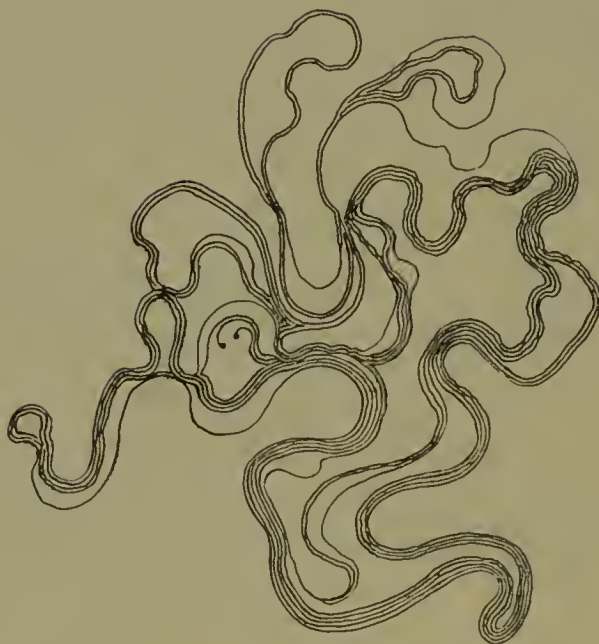


FIG. 1.  
GOUT BACILLUS, MAGNIFIED.



FIG. 2.  
COLONY OF THE GOUT BACILLUS EXPELLED DURING PYONEX TREATMENT.  
HIGHLY MAGNIFIED.

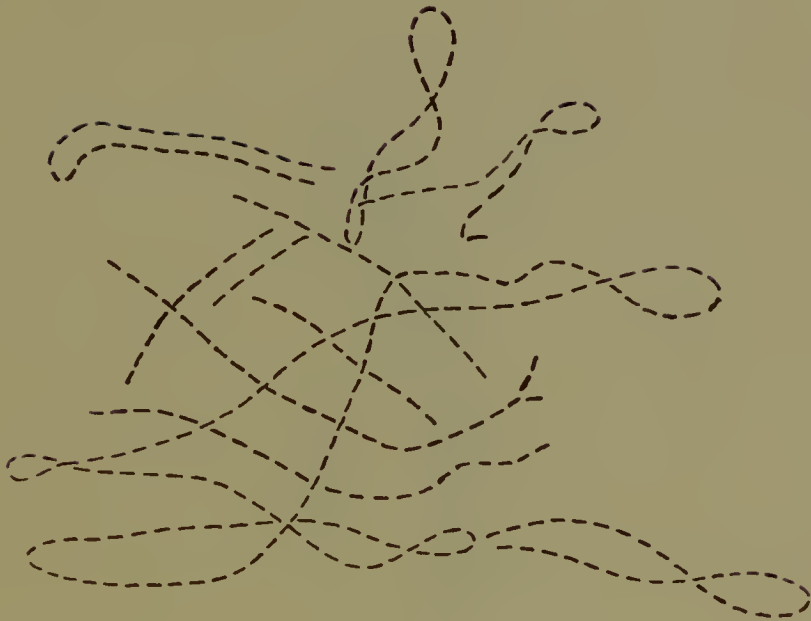


FIG. 3.

GOUT BACILLUS, HIGHLY MAGNIFIED, SHOWING THE LEPTOTHRIX.

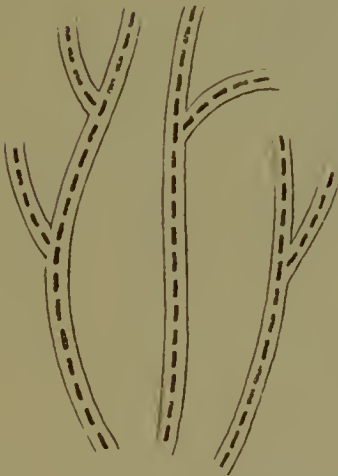


FIG. 4.

*Bacillus pyocyaneus* IN SHEATH.

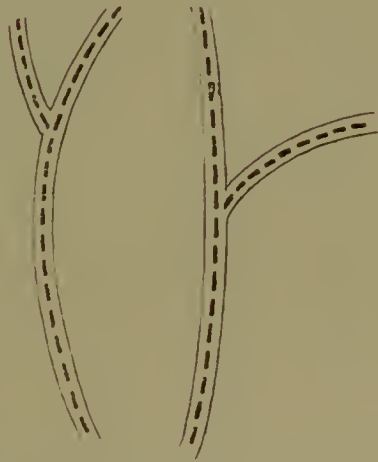


FIG. 5.

ANTHRAX BACILLUS IN SHEATH.

The extraordinary similarity of these bacilli is obvious, and the function of each being to propagate the bluish-green pigment, may readily be understood. The bluish-green appearance of the countenance in gout is entirely due to the formation of this pigment by the Gout Bacillus. It is rapidly expelled from the system by the Pyonex Treatment, and the facial integument forthwith resumes its natural hue, while at the same time the gout symptoms disappear.

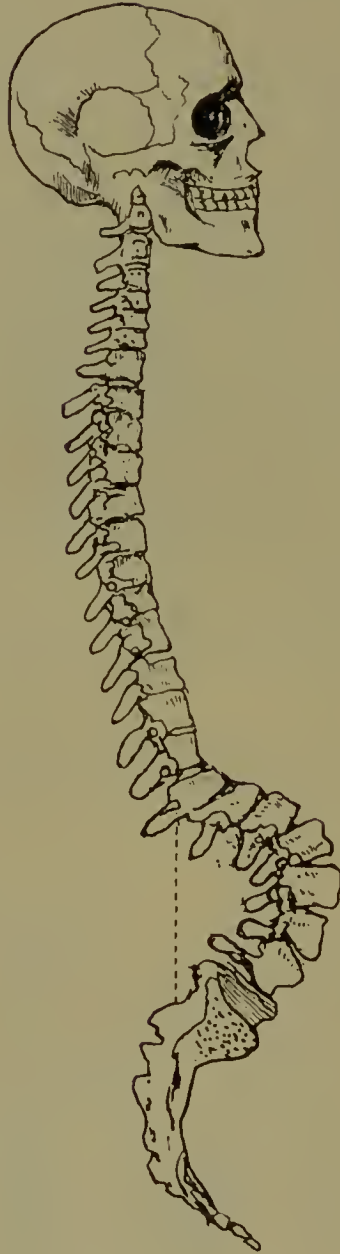


FIG. 6.

## ANTERIOR SPINAL CURVATURE

In this case the lumbar vertebræ were drawn back into their exact natural position, by the restoration of their ligaments and muscles to their proper tone and elasticity. This was accomplished by the expulsion from the parts, by the application of Pyonex Treatment, of all the purulent products which infiltrated them.



FIG. 7.

This figure represents a double spinal curvature, which had existed for 18 years, the patient never being able to walk unassisted. After a few weeks' treatment with the Pyonex, the spinal column became perfectly straight, and remained so permanently. The natural walking powers were restored, the ligaments and muscles being rid of all purulent products, quickly regained their proper elasticity, and drew the vertebræ into their normal positions.



# THE PYONEX: ITS THEORY AND PRACTICE.

## SECTION I.

### CHAPTER I.

BLOOD IMPURITIES.  
THEIR INTRODUCTION INTO THE SYSTEM.  
THEIR EXPULSION.

#### THE PYONEX, ITS THEORY AND PRACTICE.

THE theory and practice of the Pyonex Treatment are based on the following fundamental principles :—

(1) That nearly all disease is caused by the presence of some abnormal, extraneous, or foreign element in the affected tissues or in the blood.

(2) That congestion, pain, swelling, discolouration, inflammation, disorganisation and suppuration, are only symptoms and sequences that are produced by the said foreign element.

(3) That if the said foreign element be totally removed, the said symptoms disappear.

This foreign element may be :—

(1) The anopheles acid that produces intermittent fever.

(2) The putrid sewer gas that causes typhus.

(3) The virus that produces variola.

(4) The venom that induces hydrophobia.

Hypothesis.

Etiology.

Symptoms.

Mode of  
cure.

Morbid  
elements.

- (5) The morbid element of scarlatina.
- (6) The micrococcus of erysipelas.
- (7) The bacteria of diphtheria.
- (8) The spirillæ of relapsing fever.
- (9) The bacterium of Asiatic cholera.
- (10) The bacillus tuberculosis of phthisis.
- (11) The uric acid bacillus of gout.
- (12) The formic acid of rheumatoid arthritis.

When these and other blood poisons find their way into the system, they never fail to produce their characteristic results. The symptoms caused by the same poison are, as a rule, identical in character. Their severity will vary with the quantity and virulence of the virus.

Two morbid  
elements.

When two morbid elements invade the system at the same time, the combinations of their symptoms results ; as, for example, where urates and lactates abound in the circulation and tissues, causing symptoms of gout and rheumatism.

Science has not yet discovered what is the exact nature of many kinds of morbid matter, but by the aid of the microscope, experts have been able to arrange many of these under two general heads. These are :—

#### VEGETABLE AND ANIMAL.

The vegetable cells or bacteria which principally interest us are of three kinds.

Bacteria.

- (1) The round, sphæro-bacteria or micrococci.
- (2) The long and short or bacilli.
- (3) The spiral, or spirochætæ, or spirillæ.

There are also three divisions of the animal parasites, which are :—



Parasites.

- (1) Protozoa.
- (2) Arthropod.
- (3) Vermes.

These latter do not so greatly interest us; while of the former, the bacilli, which largely preponderate, call for much scrutiny.

It is by no means an easy task to discover and Germ. explain the various characteristics of such minute vegetable and animal organisms. But a great deal has already been accomplished, and as every generation adds to the knowledge of its predecessor, it is reasonable to conclude that time will unfold much of what still remains enigmatical in this branch of the causation of disease.

But even if it be taken for granted that such discoveries be eventually made, we shall still be a long way from probing to its depth this branch of science. The reason why the elaboration or period of incubation of this or that specific poison should result in a certain ailment, will still remain unfathomed by man.

### CAUSATION OF BLOOD IMPURITIES.

There are many ways by which blood poisons find their way into the system. There are also many ways by which the blood may become contaminated by internal causes, such as, for example, the impaired function of any given organ.

The more general way by which these poisons Impure air. gain admittance into the system is through the atmosphere. Air which is charged with noxious elements passes into the pulmonary capillaries, it then enters into the blood, which conveys it to all the tissues.

## A SEPTIC ELEMENT

Infected  
water.

may also be introduced through the skin by its coming into contact with impure water.

Rivers which run through marshy districts, especially in tropical climates, become charged with malarial poison. Strangers who bathe in these have violent attacks of intermittent fever, which may recur at intervals for many years. The same thing may happen from bathing on the sea coast. In such cases, although bathing in the dry season may be beneficial and unattended by danger, it has to be discontinued during the rains because of the copious draining from the marshes.

## ANOTHER WAY

Arrest of  
skin action.

in which a morbid element may accumulate in the system, is by the sudden arrest of the skin action.

The natural exudation which goes on without interruption through the skin, takes out of the system an immense quantity of morbid matter. It often happens from cold and other causes that this is checked, and the matters which are thereby retained in the system may produce a variety of complaints.

Impure food and water may rapidly contaminate the blood and produce disease. The rays of the sun, striking on the spinal system, may produce a morbid condition of the surrounding tissues.

Torpid liver.

If the liver is sluggish, not only is the assimilation of the food imperfectly effected, but a series of disagreeable symptoms usually follow. In this case the cause of the trouble is that an insufficient quantity of bile is secreted from the blood and poured into the alimentary canal. The constitutional dis-

turbance caused thereby is sometimes so great that death quickly ensues.

### THE KIDNEYS

excrete a violent poison, so that if their action ceases Kidneys.  
for a comparatively short time, the subject may die  
of uræmic poisoning.

Whatever be the source from which the system Degree of  
impurity.  
receives a poison, whether from impure air in the  
lungs, absorption through the skin of fluid bearing  
the germs of disease, or whether from the arrest of  
the healthy function of the skin, or any internal  
organ, it is evident that while such matter lodges in  
the system it will do harm. The degree of harm will  
be in proportion to the quantity and virulence of the  
poison. It may be so little as barely to be noticed,  
or it may be like the virus which produces a black Black  
variola.  
variety of variola, in which case the patient commonly  
succumbs, even before the pustules have had time  
to make their appearance.

### NOT ONLY THE BLOOD.

but the muscles, joints, liver, spleen, kidneys and General  
infiltration.  
other internal organs are liable to become saturated  
by purulent infiltration, and their function be thereby  
impaired.

Many persons whose systems are partially per- Baneful  
effect.  
meated by such morbid products struggle on for  
years with undermined health, consulting any new  
physician to whom they may be recommended, and  
bemoaning the fact that all their former elasticity and  
spirit has disappeared.

## HOW IMPURITIES MAY BE ELIMINATED.

It being an established fact that the majority of diseases are produced by some abnormal principle in the blood, tissues or joints, the question that naturally arises is, How are we to get rid of it? In some cases violent and long-continued purging not only helps but actually accomplishes the object. In others copious perspiration, when persevered in, gives great relief.

Cathartics.

Elimination.

Sea voyages.

Long sea voyages and pure country air furnish a means by which a quantity of additional ozone is supplied to the lungs, and by such assistance to the natural powers many patients in which malarial and other poisons had commenced their morbid work have been restored to normal vigour.

## BUT THE GREAT MAJORITY

Not practicable.

of cases are not amenable to such measures. In most instances patients, owing to the exigencies of their occupation, or from lack of means, are unable to adopt them. In others, they are too ill for the thought to be entertained; while in others, notwithstanding the fact that a fair trial of such measures has been made, their disease not only continues but further develops. It is with this last-mentioned class that we have specially to deal. Let us take, for instance, a typical case of

Knee-joint

## RHEUMATISM OF THE KNEE JOINT.

There is pain, much increased by motion; there may be some swelling, accompanied by more or less inflammation. The patient is confined to the bed or couch. We know that a foreign element in the

joint is producing all the mischief, and that if it were removed the pain and inflammation would cease and the joint would return to its normal condition.

What is the method of treatment usually adopted in such cases? The joint is kept warm, bathed in hot water, and perfect rest is enjoined. A stimulating liniment may be applied and salts of potash and salicylic acid suitably combined may be administered internally. Other medicines, such as colchicum and guaiacum, may be given according to the idea of the practitioner.

Usual  
treatment.

#### IN THIS TREATMENT

the use of the baths is to allay pain and inflammation. The result hoped for from the medicines is that the specific morbid element which is the cause of all the mischief may be so attacked that it will be broken up and dispersed. If the case does not yield to this treatment a more vigorous one may be employed in the way of blisters, and these may have to be repeated several times before relief is obtained. In some cases, notwithstanding the blisters, the case proves stubborn and may become chronic. Some weeks would be occupied in the administration of these remedial agents. But supposing that the remedies proved effectual so that the complaint disappeared, it would still be impossible to determine how much of the exciting cause had been carried out of the system, or how much had been merely broken up and dispersed in it. It might travel about the body, and for a time at least there would be a chance of its return-

Objects of  
treatment.

Stubborn  
cases.

Exciting  
cause not  
expelled.



ing to its old seat, and then performing an act of metastasis by appearing in some other part.

Whenever this happens it is clear that the morbid exciting cause is still lurking about the system, and during this period there

### IS ALWAYS PREDISPOSITION

on the part of the patient to contract the complaint again.

Predis-  
position.

One patient so easily takes cold, to another a slight exposure to cold produces rheumatism, another is attacked in the throat by the same cause, another is never chilled without suffering from congestive headache or intermittent fever, another cannot venture out at night without being attacked by asthma. In other cases gout, neuralgia, &c., are produced so easily as to leave no other way of accounting for them, except that the system is charged with morbid matter to such an extent that the smallest irregularity will produce some kind of illness.

### EXPULSION OF THE EXCITING CAUSE.

Exciting  
cause  
expelled  
by  
Pyonex.

But supposing that, for example, in the case of rheumatism already mentioned, all the morbid elements which constituted the exciting cause were expelled from the system at the very onset, not only, as we remarked, would the joint rapidly resume a healthy state, but there would be no subsequent lurking of the element about the system, nor the predisposition to again contract the affection.

This is precisely what can be accomplished by the use of the Pyonex. On the application of the instrument to the calf and thigh the pain leaves the

joint. In a few hours or a day or two, according to the severity of the case, motion may be effected without pain. In forty-eight hours the morbid matter has already left the joint and appeared on the surface of the skin in the form of pustules. The matter contained in these pustules is of a decidedly

#### TOXIC CHARACTER.

A small quantity of this pus when introduced by Toxic pus. accident into the veins may produce pyæmia and rapidly prove fatal. The patient is pleased to know that such a noxious element has been eliminated from his body, and wonders that the mischief it produced was not greater.

There is no more morbid matter left in the The system cleansed. system, for which reason the patient is not predisposed to again contract the same affection. The recovery is rapid and perfect, and accompanied by an exhilaration of spirits that is not met with in the general plan of treatment.

#### ANOTHER EXAMPLE.

We will take by way of illustration another case, Variola. viz., that of small-pox. In this case the morbid element is received into the system from four to fourteen days before the pustules, with their accompanying fever, appear. These days constitute the period of incubation.

The usual treatment in small-pox is much a matter Incubation. of form. It is not claimed that it is more than palliative. No course of treatment has been made prominent by which it has been claimed that the exciting cause has been extracted from the system

and the disease thereby been destroyed in its infancy. This terrible affection pursues its course. The pustules appear in due time accompanied by a raging fever, and there is often a certain amount of anxiety felt as to whether the case may endanger life. Everything possible is usually done that will contribute to the comfort of the patient; soothing medicines, fresh air and selected diet. But such treatment does not eliminate from the system a particle of the poisonous element which is causing the disease. If the virus is sufficient in quantity to destroy life it will do so.

Palliative  
remedies.

But what happens if we employ the Pyonex Treatment when the patient is taken ill?

Effects of  
Pyonex  
treatment.

Artificial pores are made by a painless operation on the chest and back. The absorption of the stimulating oil through these pores produces an increased activity in the circulation through the whole of the system and especially in the integuments.

Increased  
circulation.

Besides this, the treatment acts as a strong counter-irritant and serves to divert the morbid products from the more central parts and brings them to the surface by a process of exosmosis in a manner similar to that of a blister. Toxic matter pours out of the system, and in the short period of from two to three days the whole surface treated is covered with pustules which are charged with the small-pox virus. Not a pock appears on the face, disfigurement is avoided, the patient improves rapidly, has not a bad symptom, and in a few days is perfectly well.

No compli-  
cations.

*Complications.*—There is another interesting consideration, which is, that notwithstanding all the care



bestowed on patients suffering from this malady, the complications so seriously affecting the hearing, sight, throat, &c., it may be for many years, never occur when the Pyonex Treatment is employed.

#### PERIOD OF INCUBATION.

When the exciting cause has been received into the system, its morbid effect in some cases begins to manifest itself in twenty-four hours or less; but this is exceptional. Septic poisons which are capable of producing diseases which endanger life, usually remain in the system several days before their dangerous results are developed. The interval between their reception and the appearance of their consequences we term the "Period of Incubation."

Period of incubation.

During this period there is great activity in the multiplying of the pathogenic germs. The rapidity of the multiplication is remarkable, and when that infiltration of the tissues has attained a certain point, the preliminary comparatively mild symptoms are magnified to a burning fever, with its hot skin and dry tongue, rapid pulse, headache and other accompaniments.

Growth of exciting cause.

Typhoid Fever averages 14 days.

Typhus       "       "       12   "

Variola       "       "       14   "

Scarlatina       "       5   "

Rubeola       "       6   "

Diphtheria       "       6   "

Malarial Fevers       "       3   "

The great value of the Pyonex Treatment in these and other cases of blood poisoning is that, when applied promptly, it will remove the poison from the

Value of Pyonex.

system before it has time to produce its dire effects. After the patient who has received into his system the morbid element which is capable of producing one of these affections takes to his bed fortunately, as a rule, some days elapse before his malady comes to such a climax as to endanger life. This is the moment that is taken advantage of for the application of the Pyonex.

Time.

Typhus and typhoid.

In typhus and typhoid there are eight or nine days before a fatal termination is looked for. When the Pyonex is applied in such cases it begins to attract to the surface the exciting cause from the moment of its application. The papular, vesicular and pustular stages quickly follow each other, so that in forty-eight hours or more the pustules are mature.

When pus is abundant.

When the system is unusually charged with morbid matter, as is always the case when some fever or kindred malady is in process of development; the matter that is driven out by the Pyonex Treatment is, as a rule, not confined to the artificial pores created by the instrument.

Thirty-three pores.

The number of pores which are made by each touch of the instrument is thirty-three. The rush of matter to the surface, when the system is so highly charged, may convert each perforation into one

Confluent.

general sack or bag, the contained pus being sufficient either to fill it wholly or partially. In addition to all the perforations being confluent, the surrounding integument will usually be so full of pustules, that they almost touch each other. As only two days are

Two days.

required for the pustules to mature, all anxiety about the patient's recovery may be thrown to the winds. If the treatment be applied at the time the patient

takes to his bed, the high pulse and intense fever begin to abate and every symptom improves, so that instead of his life being in danger as the ninth day approaches, he will be up and engaged in his usual occupation. The exciting cause of the fever having been expelled, the system assumes its normal condition.

Fever avoided.

The same argument holds good with regard to the other six febrile affections mentioned, or, in fact, in any other like affection. Whatever be the threatened fever or kindred affection, it will be cut short and destroyed as soon as the exciting cause is expelled.

All fevers alike.

#### THE FULL BENEFIT.

When a large quantity of morbid matter is expelled after the application of the Pyonex, the benefit to the patient is correspondingly great. If a person will realise the utmost benefit of the treatment, the applications should be repeated at intervals of ten or twelve days, until no more matter is expelled. When this is carried out, the renovation in health and spirits is wonderful and the benefit is felt for years.

Full benefit.

Invalids realise a marked benefit from change of air. But if circumstances do not allow of this, and they are treated by the Pyonex at home, the improvement is more marked. It commonly happens, however, that the change altogether fails, and the patient returns to his home in a worse state than he left it :

Improvement in health.

THE PYONEX TREATMENT WILL NOT FAIL in such cases to produce the desired results.

Does not fail.

#### RAPID CURES.

Owing to the fact that in so many cases a sudden and almost miraculous cure is effected by this treat-

Cures not all rapid.

ment, many persons are led to expect that whatever be their ailment they will get well with one or two applications, and if after having them they are not relieved, they are not satisfied. This will appear as more than unreasonable to persons of mature judgment. It has, however, been known to occur repeatedly, even in cases where an extraordinary benefit has resulted from the first application.

Partial  
relief.

The treatment should be regarded in the same way as a medicine which is doing good, and should be continued until it ceases to produce a crop of pustules. If any other course be pursued, only a part of the evil has been removed and the relief is only partial.

Successive  
application.

In many cases the first application of the instrument suffices only to extract the morbid element which lies nearest to the surface, there being ample quantity here to fill up the pustules. The second application will reach the layer of tissues which lies deeper, and the third still deeper, and so every fresh application will do its work, until finally there is no pus left. If there is a good discharge from the first application, improving symptoms will be sure to follow, unless the system be so infiltrated that the first discharge formed a very small portion of what existed in the system. In such cases, three or four or more applications may be necessary in order to show an amelioration in the condition of the patient.

Second.

Third.

Indication  
to continue.

When matter is expelled with anything approaching to freedom, the indication is by all means to go on and give the system all the time it needs to rid itself of the virus. In illustration I would mention one case where there was anterior curvature of the spine, an account of which is given under "Spinal Curvatures."

In this case it took over four weeks to establish the expulsive action, and small discharges of pus produced comparatively small improvement. But every application after the fourth resulted in an increased discharge, until the pus poured out in an astonishing manner. Instead of the cotton wool being removed only once at the termination of forty-eight hours, it had to be changed three times within twenty-four hours, and each time it was soaked with purulent matter. This went on for weeks without a sign of diminution, and I told my patient that she appeared to have a pus factory within her, and in fact there seemed to be no end of it. But the treatment was pursued without the smallest relaxation, until at last the store was exhausted, and the final results were most felicitous. She subsequently stated that her former physician expressed his surprise on seeing her again restored to health, and said that when he wished her good-bye he never expected to see her again.

Example.

Expulsion  
of pus  
delayed.

Profuse.

If after each application there is a good discharge of pus, it is certain that we are on the right track. In fact the varying feelings of the patient are of little import. The improvement will be sure to come when the process of expulsion is accomplished. The pus being got rid of, the natural healing powers have no further let or hindrance in effecting their offices, and the previously affected parts again return to their due functions. Any person under this treatment should be advised to have every confidence in obtaining a complete recovery, if after each application a quantity of poisonous matter is removed from the system.

Indication  
to continue.

Prognosis.



## CHAPTER II.

### *THE FORMATION OF PUS AND ITS ASSOCIATION WITH DISEASE.*

PUS GERMS AND THE RAPID FORMATION OF PUS.

VARIETIES OF MICROCOCCI AND BACILLI WHICH ARE INTIMATELY CONNECTED WITH THE CREATION OF PUS.

NUMEROUS AFFECTIONS IN WHICH THE PRESENCE OF PUS IS A PREDOMINANT SYMPTOM.

#### **PUS: ITS FORMATION AND WHERE FOUND.**

OUR present object is to shew how intimately pus is connected with a large number of diseases, in many of which it appears to be responsible, not only for their more serious symptoms, but also for their fatal termination. Not only in many cases is the inception of the disease closely associated with the formation of pus-cells in the tissues that are first attacked, but the exceedingly rapid multiplication of these cells results in the purulent infiltration of the affected parts, and the symptoms produced by their toxic nature may be rapidly communicated to the whole system. The progressive development of many diseases is attended by the confluence of these cells in such vast numbers that abscesses of various sizes are successively formed in many parts, quickly causing the patient to succumb.

Pus forming cells.

During the process of inflammation, it has been set forth by Virchow and maintained by Stricker and

others, that the several varieties of fixed cells, such as muscle cells, connective tissue cells, epithelial cells and nerve cells, all proliferate and produce pus cells. Conheim considered that the origin of pus cells was due only to the emigration of white blood corpuscles. But from all the evidence produced, the more acceptable view appears to be that the fixed cells have not the inherent power to resist inflammatory action or to remain passive, but that they degenerate, proliferate, and produce young cells, which can only be regarded as real pus cells. These pus cells, which rapidly increase by fission, and are one of the prominent products of inflammation, may be found in every kind of inflammatory exudation in varying quantities. In proportion as the number of pus cells increases in a discharge, so its colour develops, and its consistence is changed from a serous to a thick or creamy nature, when it becomes pure pus.

Conheim.

Pus cells.

Pus is composed of pus cells and a fluid which is designated liquor puris, in which they are suspended. The cells are grouped with leucocytes, wandering cells, embryonic cells, and several others.

Composition of pus.

The most common way in which these cells exist in cases of septicæmia is, in a more or less general distribution, in the tissues of one or more parts. This rapid and unchecked formation at any given point results in the creation of an abscess.

Pus cells in septicæmia.

We will now pass on to notice the relation which certain pathogenic bacteria bear to the formation of pus.

Pathogenic bacteria.

Micrococci and bacilli are the two kinds of bacteria which especially interest us. There is another micro-

organism which we must also glance at, which is called actinomyces, or ray fungus.

**Micrococci.** Of the micrococci there are three forms, which are proved to be so responsible for the actual formation or production of pus, that this character is embodied in their name, *e.g.*:—

The *Staphylococcus pyogenes aureus*;

The *Staphylococcus pyogenes albus*;

And the *Streptococcus pyogenes albus*.

*Staphylococcus pyogenes aureus*

The *Staphylococcus pyogenes aureus* is met with in abundance in purulent inflammations and ulcerations, in its single or double dumb-bell form. It is present in large numbers in the pus of abscesses, surrounding the pus cells and existing in the interior of the cells. When subcutaneous injections of these micrococci are made in animals death may follow in a few days, caused by the purulent abscesses which are found in the viscera.

*Staphylococcus pyogenes albus.*

The *Staphylococcus pyogenes albus* is also met with in purulent matter, especially that of acute abscess, and is endowed with the same malignant characters, when injected subcutaneously, as the *Staphylococcus pyogenes aureus*. It is interesting in a pathological view, to consider the great rapidity with which these micro-organisms may multiply in the system, as set forth by Klein.

Rapid increase.

He states that on introducing into a suitably prepared broth, which was kept in the incubator at about 98° F., 248 per cubic centimetre of the *Staphylococcus pyogenes aureus*, they increased in twenty-four hours to twenty millions per cubic centimetre; and from a number of experiments it was calculated that each

1 = 80,000. microbe increased to 80,000 during the first twenty-



four hours. No time appears to be lost by this bacterium, as its first complete division takes place in twenty minutes.

The *Streptococcus pyogenes albus* occurs in chains *Streptococcus pyogenes albus* instead of clusters, as the case of the *Staphylococcus pyogenes aureus* and *albus*. The chains are rapidly formed and attain great length. On its inoculation in a rabbit, it shews a tendency to create inflammation and abscesses, septicæmia and death, the capillaries becoming plugged with masses of the micro-organism. It does not increase its numbers with the same rapidity as the *Staphylococcus pyogenes aureus*, occupying thirty minutes instead of twenty in order to form a complete division. Its mode of division has been Its increase. observed to vary, by its increasing to five or six times its natural size and assuming a round form which splits into halves, which again split up, and so this fission process is carried on, until the original coccus becomes eight or sixteen. But its usual mode of division is by a slight enlargement and division into two by transverse fissure. In fœtid pus, as also in Fœtid pus. acute suppurative endocarditis, the pyogenic staphylococcus and streptococcus are found.

In addition to the already mentioned bacteria which are responsible for the formation of pus, there are several others, there being no less than nine Nine species. different species that have been discovered in pus.

The gonococcus is another pus-producing micro-coccus, its most characteristic morphological property being its appearance, in the shape of dumb bells, either within the protoplasm of the pus cells or within or adhering to the epithelial cells. There are micrococci in the pus of gonorrhœa which are con- Gonococcus.

Not  
virulent.

sidered to be a variety of the staphylococcus. The gonococcus has characters with regard to its culture which show it to be distinct from any other kind of micro-organism. But it does not appear to be of a virulent nature; it is, moreover, short lived when produced by culture. It has been inoculated in the human subject, and the result has been the production of real gonorrhœa.

### BACILLI.

*Bacillus  
tuberculosis.*

When a minute particle of human tubercular material is inoculated into the tissue of a guinea pig, the nearest lymph gland becomes at first hard, and after ten or twelve days breaks up into an abscess and discharges thick creamy pus. A crust may form over the outlet, but the rapid creation of new pus soon displaces it, and the outlet is again made. Other glands follow the example and break up into thick pus. The animals so inoculated waste and die.

Earth  
bacillus of  
tetanus.

Nicolaier<sup>1</sup> made the striking discovery that the earth, as ordinarily exposed to the sun, when inoculated into the subcutaneous tissue of rabbits and other animals, often produces a local suppuration which is rapidly followed by true tetanus. Both in the earth and in the pus he found the constant presence of the characteristic drum-stick bacilli of tetanus, and the pus when inoculated into rabbits or guinea-pigs produced tetanus. The pus, owing to the spores it contained, although in a dried state, preserved its virulence for many months.

Tubercle bacilli have been found in the udder of

<sup>1</sup> Inaugural Diss., Göttingen, 1885.

a cow, and in many cases purulent deposits have been demonstrated owing to its presence. Tubercle bacilli.

The bacillus of catarrhal conjunctivitis is present in the purulent exudation of the conjunctiva and commonly enclosed in the pus cells, whose protoplasm is at times crowded with them. Con-junctivitis bacillus.

Enormous numbers of non-motile bacilli are always present in the purulent bronchial secretion of influenza, which do not occur in the bronchial secretion of other pulmonary affections. Influenza bacillus.

The *bacillus pyocyaneus*, which produces the blue-green colour in pus, is of a pathogenic nature. The blue pigment has been isolated, and when injected in animals they die of inflammation, accompanied by copious purulent exudation, which is abundantly charged with the bacilli. *Bacillus pyocyaneus.*

### ACTINOMYCES.

The ray fungus was first shown by Bollinger to be the cause of various tumours in cattle, which lead to suppuration. The fibres of the parasite radiate, and the disease which is caused by it has been named actinomycosis. This disease has been frequently discovered in man, commencing with the production of a hard tumour, which suppurates and forms an abscess. The centre of the tumour softens and becomes purulent, and the resulting abscess bursts and discharges pus copiously, and then forms an ulcer. A number of yellowish granules are found in the pus, which by the aid of the microscope are seen to be a mass of the ray fungus. These abscesses may form in the lung, the larynx, the pharynx and other parts, and in all cases contain masses of actinomyces. Ray fungus.

Actino-mycosis.

Pus formed.

*Protozoa*.—Kartulis in twenty cases of dysentery associated with abscess of the liver, discovered in every one the dysenteric amœbæ, which could be seen through the wall of the abscess.

The foregoing considerations appear to furnish us with satisfactory evidence of the facility that exists in the human frame, under various pathological conditions, for the creation and rapid multiplication of pus cells. We also see that the creation of the various classes of cells depends on a variety of circumstances, and that the pus which results from one variety of cells produces its specific pathological result.

We may now glance at some of the very numerous instances in which pus, or pus cells, are intimately associated with disease.

#### **PUS AND PUS CELLS, WHERE MET WITH.**

- (1) Inflammation. Pus cells are found in ordinary simple inflammation of mucous membranes, the exudation being serous and muco-purulent.
- (2) Inflammation. Ordinary inflammation also is accompanied by the production of fibrin, serum and pus.
- (3) Thrombosis. In portal thrombosis the portal vein is found to contain puriform matter, and the liver multiple abscesses. The thrombus breaks up into a puriform mass, and the vascular walls become infiltrated with pus cells.
- (4) Joints. Pus is found in suppurative inflammation of the joints, also in abscesses which are formed in the muscular tissue in any part of the body.
- (5) Pyæmia. In pyæmia, the soft tissues may break down and form pus cells, which rapidly increase in number so

as to form abscesses in the spleen, kidneys, heart, liver, muscles and other parts of the body. In the uriniferous tubes, owing to the colonies of micrococci which are met with, abscesses are formed.

In ulcerative endocarditis pus is formed, owing to the masses of the staphylococcus pyogenes aureus which abound. (6) Endocarditis.

In pneumonia the substance which fills the air cells, when examined under the microscope, is found to contain in its meshes a large number of pus cells, which are probably emigrated white blood corpuscles. These cells are abundant and contain molecules of fat, and as the disease advances they undergo fatty degeneration. After death the lung is found to be in the condition of purulent infiltration. The air cells are filled with pus and pus cells. The lung tissue breaks down, and pulmonary abscesses, which contain collections of pus, are thus formed. These abscesses may be minute or reach the size of an egg, or even involve the whole of the lobe. The cavity which has ragged walls may assume various forms. (7) Pneumonia.

*Pleurisy.*—On microscopical examination being made of the serum which is effused in pleurisy, pus cells are discovered in sufficient number to make it somewhat turbid, while in the inflamed pleura there is a considerable number of emigrated white blood corpuscles. The lymphatics are also invaded by cells. The examination of a microscopical section of the false membrane reveals a superficial layer containing fibrin and pus cells, and a deeper layer containing leucocytes. As the discharge disappears the pus cells may disintegrate and become absorbed. When the multiplication of the cells is carried on to (8) Pleurisy.



a large extent a quantity of pus results, thereby constituting empyema.

(9) Em-  
pyema.

In *empyema* the fluid may consist of a mixture of serum and pus, or fibrin and pus; but in the more severe cases it is pure creamy pus. As the various species of bacteria which cause suppurative inflammation are met with in empyema, the special kind which is responsible for the production of the pus cannot always be determined.

(10) Phthi-  
sis.

*Phthisis*.—In the newly formed cavities which are caused in phthisis by the absorption of the lung parenchyma, the walls are soft and easily give way; while in the older ones which may contain pus they are of a firmer texture, or somewhat allied to the pyogenic wall of an abscess. If the cavity burrow its way into the pleural sac both pus and air may enter it. The expectoration is more or less infiltrated with pus, and may contain yellow striæ of pus. When a tuberculous abscess opens, there may be a sudden expectoration of a quantity of matter of a purulent appearance.

This pyoid matter and sputum under the microscope, is shewn to consist of pus corpuscles, tubercle bacilli and other ingredients.

(11) Bron-  
chitis.

*Bronchitis*.—The sputum in this affection, which may be streaked with blood, is muco-purulent. The pus cells may predominate to such a degree, that the expectoration may consist of almost pure pus. A copious expectoration of pus may take place owing to the bursting of a tuberculous abscess. The pus is opaque and readily mingles with water, in which it sinks.

*Acute Laryngitis*.—Serum, mixed with pus and

mucus, result from the inflammatory action in this (12) Laryngitis. affection. The glands become poisoned by infiltration with pus, which can be expressed from them. The submucous tissue may also be so swollen as to become a dangerous symptom, owing to its infiltration with serum and pus. The colour of the mucus changes in proportion to its accretion of pus cells, as it becomes distinctly purulent in the severer types of the affection.

*Pericarditis*.—The inflammatory exudation in this (13) Pericarditis. affection consists largely of pus cells; in rare cases it is distinctly purulent. Wandering cells or pus cells are present in the fibrinous layer of the serum, also in the tissue of the serous membrane. In severe cases the whole of the pericardial sac may become distended with pus, which in quantity amounts to several pints. In such cases the pus may burrow through the pericardium and the soft tissues beyond, and escape externally.

In *myocarditis* several small abscesses form in the walls of the heart. If they burst through the (14) Myocarditis. outer wall the result is purulent pericarditis, and if internally cardiac aneurism may form. The *Staphylococcus pyogenes aureus*, being found in great numbers in the pus, is considered to be responsible for this suppuration.

In *tonsillitis* the central parenchyma of the tonsil, (15) Tonsillitis. under inflammatory action, breaks up, with the resulting formation of pus. There is also an inflammatory exudation from the mucous membrane containing pus cells; an abscess is formed in the body of the tonsil.

(16) Pharyngitis.

In *pharyngitis* pus may form and constitute an abscess in the deeper tissues of the pharynx.

(17) Parotitis.

In *parotitis* pus is formed in the gland parenchyma and an abscess results.

(18) Gastritis.

In *acute gastritis* the gastric juice may become deficient and be replaced by a yellowish purulent mucus, while the mucous membrane is coated with a thick layer of muco-pus.

(19) Dysentery.

In *dysentery* the pus which is contained in the tenacious mucus which covers the surface of the mucous membrane of the intestine, sometimes communicates to it an opaque and yellow colour. The swollen condition of the mucous membrane is due in part to the pus cells. Pus cells abound in the muscular coat, and on all sides of the small veins exist in swarms. The mucous membrane is also laden with pus cells. In severer types of inflammation, the superficial layer of the mucous membrane is destroyed by the ulcers, which result from the excessive suppuration. In diphtheritic dysentery there is an exudation of blood and pus cells on the mucous membrane of the large intestine. Hæmorrhage with pus cells and bacteria are abundant. In hot climates the mesenteric glands become inflamed and suppurate, and many abscesses form in the liver. The excreta, under the microscope, shew mucous discharges containing white blood corpuscles, which in no way differ from pus cells. The large proportion of pus mixed with the mucus entitles it to the appellation of muco-pus.

(20) Typhlitis, &c.

In *typhlitis*, *perityphlitis*, *colitis* and *enteritis*, or inflammation attacking any other part of the intestinal tract, a common result is the rapid pro-



duction of pus cells, and the subsequent formation of abscess.

*Peritonitis*.—Owing to the high inflammatory action in this affection, the serous surface loses its normal lustre, and soon becomes densely infiltrated with pus cells, which give it a greenish-yellow colour. The subserous tissue is œdematous, and its veins are surrounded with swarms of pus cells. The serum, which is effused into the peritoneal sac, also contains pus cells, which are mixed with serum, fibrin and red blood corpuscles. Whatever other ingredients the exudation contains, pus is always present. The pus cells in the effused serum are sufficiently numerous to make it turbid. Purulent effusions are also frequently met with. All grades of transition occur between the partially turbid serum and thick, creamy pus. A characteristic of peritonitis when it accompanies puerperal fever or other infectious diseases, or when it is of a traumatic origin, is that it is purulent. Small abscesses filled with serum and pus are also met with in various parts of the peritoneal cavity. Suppuration and ulceration take place in the part of the intestine which is in contact with these encysted collections of pus, so that the pus may enter the bowel and escape with the excreta.

*Hepatitis*.—The predominating symptom of this disease is abscess, which is considered to be caused by bacteria. Micrococci find their way into the liver through the portal vein or hepatic artery; their progress is arrested in the capillaries, where they collect in masses, which are designated zooglæa. The capillaries of the tissue which surround those spots quickly disorganise and pus cells are formed.

(21) Peritonitis.

(22) Hepatitis.

These points are of a yellowish-grey colour, and each one becomes a focus for the production of pus. There is a plentiful emigration of white blood corpuscles around these foci, which are found principally in the connective tissue which divides the lobes. As the disorganisation of the tissue proceeds, a cavity is formed which becomes filled with pus. Several of these abscesses may coalesce and form one large one, and by degrees nearly the whole of the body of the liver may be invaded and converted into pus, which may mount up to the extraordinary quantity of sixteen or eighteen pints. The volume of pus may increase with exceeding rapidity, and owing to the pressure to which it is subjected, it forces its way in newly found channels in any direction where it meets with the least resistance. In this way it may travel upwards as high as the axilla, and downwards, passing beneath Poupart's ligament, to the inner side of the thigh. In rare instances the abscess may contain decomposed fat granules, bacteria and decaying tissue mixed with pus cells. After the abscess has existed for some time its wall attains a firmer consistence. When its contents are evacuated the formation of pus ceases. In the chronic form of this disease the mucous membrane of the stomach and intestines is thickened and coated with muco-pus. In atrophy of the liver, where the hepatic cells are destroyed by fatty degeneration, leucocytes abound in the connective tissue, while the bile ducts, instead of containing their natural secretion, are charged with muco-pus. In jaundice, owing to the presence of emboli, thrombi, gall-stones, and other foreign bodies,

Pus, eighteen pints.

(23) Atrophy.

(24) Jaundice.

purulent inflammation may be quickly set up, and lead to the formation of abscess.

In inflammation of the *spleen*, emboli which contain infectious elements in the form of bacteria, in addition to their mechanical obstruction, may rapidly produce suppuration and abscess. These abscesses may also result from traumatic causes. As in the case of the liver, they may attain an enormous size. (25) Spleen.

*Encephalitis*.—Any part of the medulla may break down during the progress of this affection under the high inflammatory action, and result in the formation of pus cells and abscess. The abscess most commonly forms in the hemispheres or cerebellum, and may vary in size from a pigeon's to a hen's egg. The pus may be of a foetid nature and gelatinous consistence. (26) Encephalitis.

*The Meninges*.—In all the inflammatory diseases of the meninges of the brain and spinal cord pus is formed in varying quantities. The inflammation in pachymeningitis is always of a suppurative nature. In cerebral meningitis the hyperæmia and inflammation are followed by the production of serum, fibrin and pus. In the case of early death the exudation of serum is rendered turbid by pus cells, but when death occurs later the exudation is distinctly purulent. The convolutions are laden with streaks of pus which are of a greenish-yellow colour. The exudation consists of pus cells which are evidently emigrated white blood corpuscles. Caries of any part of the cranium may give rise to purulent inflammation, leading to meningitis. The cause of meningitis is believed to be the introduction into the cerebrum of a variety of micro-organisms, especially the bacteria. (27) Meningitis. Cerebral. Exudation. (28) Caries. Bacteria.

Spinal  
meningitis.

of suppuration, and also the specific germs of many acute infectious diseases. In the majority of cases of tubercular meningitis, the ventricles are dilated and contain an effusion of serum and pus cells. In spinal meningitis the productions of the inflammatory action are fibrin, serum and pus, which are accumulated in the subarachnoidal spaces and on the posterior surface of the cord. Sometimes the exudation abounds between the dura mater and the bone. In cerebro-spinal meningitis the purulent exudation is found in the meshes of the pia mater of the brain and the cord. It is most abundant in the lower cervical, dorsal and lumbar regions of the cord. The exudation consists of pus mixed with serum and fibrin. The sheaths of the blood vessels are infiltrated with pus cells, which may multiply and form an abscess in the brain or cord. The ventricles contain a purulent fluid, and the canal of the cord may be distended with purulent matter.

Cerebro-  
spinal  
meningitis.

(29) Hydro-  
cephalus.

In some cases of *hydrocephalus* the fluid contains distinct traces of fibrin as well as pus cells.

(30) Mye-  
litis.

In *myelitis* the stage of red softening gives way to yellow softening, the latter colour being due to the presence of granular corpuscles and pus cells.

(31) Nephr-  
itis.

*Nephritis*.—In this affection micrococci are conveyed to the body of the kidney by the current of the blood; inflammation is set up and pus cells are formed and rapidly multiplied until an abscess is created. Colonies of micrococci are found in the capillaries. A zone of pus cells makes its appearance around these necrotic spots, and the various stages of the inception and formation of abscess can be witnessed. The pus cells accumulate in the interstitial tissue and in the tubes, and the renal tissue

becomes disorganised. There may be several small abscesses or one large one.

In *pyclitis* the hyperæmia and inflammation which (32) Pyelitis. are caused by the presence of a calculus, lead to the formation of pus in the pelvis of the kidney. The pus may be of such a solid consistence as to block the canal of the ureter, causing the pelvis to become an abscess. Pyonephritis is thus caused, in which (33) Pyonephritis. disease there is a large sac filled with pus, which disorganises the body of the kidney.

In perinephritic abscess the adipose tissue which (34) Perinephritic abscess. surrounds the kidney becomes broken up, and replaced by a mass of pus. This pus burrows in various directions, but generally makes its way backwards and escapes by a fistulous opening in the lumbar region. It may extend along the psoas muscle and be discharged below Poupart's ligament, or it may reach the pleural sac or the lung, or descend into the pelvis. It may perforate and enter the colon or another part of the intestine, or it may make its way into the bladder, the pelvis of the kidney, the gluteal region or the abdominal parietes.

In *hydatids* of the kidney there is suppuration, (35) Hydatids. which leads to the formation of abscesses which contain echinococci and pus in greater or less quantity; these may open into the stomach, intestine or lungs, in which latter case the echinococci are expectorated.

In *renal phthisis* the urine contains pus, showing (36) Renal Phthisis. its formation in the body of the kidney.

In *relapsing fever* the spleen undergoes purulent (37) Relapsing fever. infiltration and the pus collects into abscesses, which involve the malpighian bodies.

Variola is a disease in which the exciting cause (38) Variola. is expelled from the system in the form of pus. The



Etiology.

pus is formed in such copious quantities that it is thrown out on every part of the integument, from the face to the lower extremities. The exciting cause of the disease is unknown, but its pyogenic properties appear to surpass that of any other known pus-producing element. It differs also in its mode of action. Pyogenic micro-organisms produce pus in the specific part in which they are lodged; but the exciting cause of variola becomes distributed through the whole of the system and creates pus in every part, so that the system is brought into a state of diffuse purulent infiltration of an exceedingly offensive and virulent class of pus. The formation of the major part of the pus appears to be completed during the stage of invasion, and its expulsion begins at the inception of the eruptive stage.

(39) Scarlatina.

*Scarlatina*.—In this affection the tonsil, soft palate and pharynx are attacked by phlegmonous inflammation, and the mucous membrane and sub-mucous layers which cover them become infiltrated with pus cells. The same action is set up in the body of the tonsil, and the breaking down of its parenchyma leads to the formation of an abscess. Extensive purulent infiltration also takes place in the connective tissue of the submaxillary region, causing erosion of the main blood vessels. Otitis may supervene, accompanied by suppuration and perforation of the tympanum. The lymphatic glands of the neck inflame and suppurate and discharge pus as soon as the cuticle is perforated. The inflammation also extends to the anterior and posterior nares, leading to the formation of pus, which comes from the mucous membrane, and is so acrid that it excoriates the face. The eyes may become disorganised and the sight

Acrid pus.

destroyed owing to suppurative action. The Eustachian tube may inflame and suppurate and destroy the hearing. Caries of the temporal bone may be followed by meningitis and abscess of the brain. Pyothorax may also be among the complications.

In diphtheria the tonsil and mucous membrane become greatly swollen and covered with a secretion of mucus and pus. Pus is also present on the false mucous membrane.

(40) Diphtheria.

In gout the tophi which are located beneath the integument cause the surrounding tissues to break up and lead to the formation of pus, which is freely discharged, and has a whitish appearance owing to the presence of chalk.

(41) Gout.

In the case of all the forementioned diseases we readily accept the fact of their association with pus as having been satisfactorily proved. In cases where the pus cells could not be distinguished by the natural vision, the microscope has come to our aid and for ever set our doubts at rest. But the field for examination which is available for the microscope is principally limited to sputa and excreta, and such emanations and discharges as are thrown out of the system under specific circumstances. These and the *post-mortem* appearances of every variety of tissue have been thoroughly examined, and the result of such investigations has been a considerable addition to our acquaintance with morbid anatomy.

Limited field.

Now, with the additional assistance of such results as are afforded by the Pyonex Treatment, we are enabled to go still further, and show that many other affections are equally associated with pus and pus cells. These are dealt with under the next heading, which is entitled Diffuse Purulent Infiltration.

New assistance.



## CHAPTER III.

### *DIFFUSE PURULENT INFILTRATION.*

ITS PATHOGENIC EFFECTS ON THE VARIOUS PARTS OF THE  
HUMAN FRAME.

THE EFFECTS FOLLOWING ITS REMOVAL BY THE PYONEX  
TREATMENT IN MANY AFFECTIONS.

CONCLUSIONS.

Pus cor-  
puscles.

PUS corpuscles as seen under the microscope, having one or more nuclei, have the power of spontaneous movement and are migratory, and are described by Dr. Beale as being without a cell-wall, assuming a variety of forms, and sending out protrusions in all directions, which become detached and form new corpuscles. When dead a kind of cell wall forms and bacteria are developed in them.

Bacteria.

The results which are obtained by the use of the Pyonex tend to favour the generally adopted view, that pus cells may have their origin in leucocytes, and that leucocytes, when attacked by a toxic or morbid element which has entered the system, may rapidly degenerate and assume the form of pus cells. When masses of pus cells lose their vitality and become disorganised, they are believed to form a breeding ground for bacteria.

Leucocytes.

All pus  
toxic.

All kinds of pus appear to be distinctly toxic in character. Even the so-called healthy pus which is discharged from a granulating wound, when it enters

the circulation through the adjacent blood vessels terminates life by producing pyæmia. The degree of toxæmia which is produced by the morbid element which constitutes the exciting cause of a disease, is always in proportion to the kind and severity of the disease. In cases where inflammation has supervened the formation of pus is rapid, as is witnessed by its profuse discharge in such cases when treated by the Pyonex. Even the thin sanious pus, which is discharged in cases of general indisposition where no disease exists, is sufficiently toxic in character to impair the functions of the muscular and nervous systems.

In inflammation.

Any tissue may be invaded by pus cells, whether bone ligament, tendon, muscle, brain, or mucous membrane. Also any viscus, whether the lungs, heart, liver, spleen, intestines, kidneys, uterus, spinal cord, spermatic cord or bladder. The extent of the infiltration of a tissue may be quite partial, or may so involve the part as to completely destroy its function.

Any tissue invaded.

We will now consider the effects of purulent infiltration in cases in which it does not appear that the pus cells have become so far decomposed that bacteria are developed in them.

Medulla.

When medullary matter is invaded, it may result in softening with all its concomitant symptoms, such as torpor and drowsiness, or extravasation, which may be consequent on the disorganisation of the walls of the blood vessels.

### PURULENT INFILTRATION: ITS EFFECTS ON NERVE TISSUE.

When nerve tissue is invaded by purulent products, effects are produced which are decidedly of a morbid character. The pus cells must be multiplied in an unusual degree before the nervous system begins to show symptoms of its invasion. The cells are plentifully distributed through the muscular system, ligaments and other tissues, before this invasion takes place. But when this infiltration reaches a high degree the nerves are attacked, and whether they be the sensory or the motor, their function is gradually and completely destroyed.

Sensory  
nerves.

It is somewhat interesting to witness the difference of the effects on the two kinds of nerve tissue. The sensory nerves in almost every case appear to be affected first. This may be plainly seen, for instance, in cases of locomotor ataxia and kindred affections of incipient paralysis; the patient being able to move his limbs freely when looking at them, while at the same time the power of sensation is entirely lost. But as the purulent infiltration is carried still further, the function of the motor nerves also becomes so affected that the limbs cannot be moved.

On the application of the Pyonex in this class of case, it may always be noted that after the first discharges of purulent matter the sensory nerves quickly recover their function, and so perfect is the recovery that a hair can be felt between the finger and thumb, and the lightest touch can be perceived by the toes.

Motor  
nerves.

But the motor nerves do not appear to have the same power of getting rid of the pus which invades

them, or recovering their normal function, it being necessary to effect several discharges of the pyoid matter in order to accomplish their resolution. Instances of this latter case may be frequently witnessed in rheumatoid arthritis, where the sensation of the whole of the lower extremity is by no means defective, but the patient is totally unable to move it.

The eyes and lids may also be invaded, and The eyes result in weak sight, aching and various forms of ophthalmia.

If bone is invaded, swelling, pain and inflam- Bone. mation may supervene.

If the ligaments be invaded they become weak- Ligaments ened and lax, and are not able to hold the bones in their right position. In the case of the vertebral ligaments being in this condition, the spinal column may become curved to either or both sides. In the case of the round ligament being affected the uterus is no longer held in its due position, and a dragging pain and weakness usually accompany these irregularities.

If muscular tissue be invaded, in the early stages Muscles a fixed pain and symptomatic weakness may be the only symptoms. Stiffness is another symptom, which may be unaccompanied by any other inconvenience. If the maxillary muscles be invaded tetanus may ensue. If the course of the infiltration be uninterrupted, disorganisation, atrophy, and absorption may accomplish the destruction of the part.

If the lung tissue be invaded, the earlier symp- Lungs. toms may be pain, accompanied by a cough, and later on bronchitis, asthma, or phthisis, involving the total destruction of the part invaded.

- Liver. If the liver be attacked, there is pain, swelling, congestion, and inflammation; the ducts also may become blocked, and produce jaundice.
- Spleen. The spleen under similar circumstances may become greatly swollen and congested.
- Intestines. If the intestines are invaded a variety of evils may occur: constipation, catarrh, dysentery, diarrhœa, or inflammation, which may lead to enteric or typhus fever.
- Kidneys. The invasion of the kidneys may lead to impaired excretion and subsequent disease and disorganisation of the gland.
- Uterus. If the uterus be invaded the usual consequence is amenorrhœa, and its important function of gestation is often prevented.
- Spinal cord. When the spinal cord is invaded pains of a remarkably severe character may supervene, which may be accounted for by its being composed purely of nervous tissue. Locomotor ataxia and other forms of paralysis may follow.
- Spermatic cord. If the spermatic cord be invaded impotence may follow, accompanied by paralysis of the erector muscles.
- Tendons. If tendons and their muscles are attacked they become weak, and after a while contraction sets in and may become permanent, the extension of the limb being accompanied by such pain as to preclude the attempt.
- Joints. If joints are invaded they may become at first painful and later on rigid, and end in permanent ankylosis.

As we thus travel over the whole of the human frame, we can trace out the ravages which are caused by diffuse purulent infiltration in every part.



# EXAMPLES OF PURULENT INVASION.

Such statements as the foregoing would amount Proofs.  
to theory only were they not verified by actual proof.  
These proofs, to which allusion will now be made,  
constitute but a few of the gratifying effects which Results.  
follow the use of the Pyonex Treatment, only the  
more important cases being referred to.

In a case where the brain was so affected that Brain.  
drowsiness amounted to an affliction, and sleep came  
on during nearly every meal or during conversation,  
after the expulsion of a quantity of pus following the  
application of the Pyonex, the soporific tendency  
disappeared and activity of mind and body, which  
had been absent for years, were restored.

In various cases where the sight was so weak Eyes.  
that reading was practicable only for a few minutes  
at a time, and in two chronic cases where the eyes  
had to be constantly shaded from the light, after an  
outlet for the offending element had been made and  
it had been expelled, they were restored to their  
normal function.

In numerous cases where the joints have been Joints.  
swollen, *e.g.*, gout, rheumatoid arthritis, and rheu-  
matism, whether the fingers, knees, ankles or great  
toes, without exception the swelling has begun to  
disappear as soon as the expulsion of the pus has  
commenced, and as the treatment has been continued  
the joint has assumed its natural proportions.

The most notable cases of weakness and relaxa- Ligaments.  
tion of the ligaments owing to purulent infiltration,  
are met with in spinal curvature. In one marked  
case of double lateral curvature, and in another of

a sharp anterior curvature, after a few applications of the Pyonex and a free expulsion of pus the ligaments recovered their natural tone and the vertebræ were pulled back and permanently retained in their right position, all the curvature disappearing. In such cases the adjacent muscles are also brought into a tonic state and considerably increased in volume, and thereby contribute an important item to the cure.

In cases without number where there has existed a fixed pain and weakness in the muscular tissues, both of these have disappeared after there has been an expulsion of purulent matter from the part. A severe case of tetanus was promptly relieved by the withdrawal of pus and toxin from the contracted muscles. A stubborn case of stiffness of the muscles of the calf was quite relieved after a few applications, the last application resulting in a copious expulsion of the pus. In numerous cases of wasting of the muscular tissue it has rapidly increased in volume and tonicity after the expulsion of the contained pus, showing that the presence of the morbid element was the cause of the loss of the vitality of the reproductive cells, as well as their atrophy and disorganisation. In a chronic case of lupus exedens and in another of lupus erythematosus, the disease disappeared on the expulsion of the pus from the involved tissues ; the discharge not being of the usual character in the case of lupus exedens. In various cases of eczema and psoriasis and other skin diseases, writer's cramp, chronic cramp of the calves and other affections, the morbid symptoms have disappeared and the affected parts have been restored



to their normal condition after the diffuse purulent infiltration had been relieved by the application of the Pyonex.

In numerous cases of the severest type of Lungs. bronchial asthma and bronchitis, every morbid symptom has disappeared after repeated crops of pustules have been thrown out. Incipient phthisis has been Phthisis. rooted out, pain has been relieved and chronic cough Pain. annihilated. The lungs, being so near the surface, and affording a large field for the discharge through the artificial pores, an extensive exit is available, and the offending purulent matter is discharged with great freedom. The proximity of the lungs to the throat is such that an application being made over them suffices to divert purulent matter from the pharynx, larynx and vocal cords. The beneficial effects in such cases are marked and usually attained in a short time. In one case where a young lady Vocal cords. had been unable to sing for years, the natural voice returned in fourteen days after a free discharge of pus from the chest. In another case where a *prima donna*, owing to the effects of an attack of influenza, was unable to get out the high notes, after a moderate discharge of purulent matter from the chest the vocal cords regained their normal condition, perfect function was re-established, and the whole system assumed a more tonic state. In a case of chronic pharyngitis, Pharyngitis. popularly known as clergyman's sore throat, after only one application the affection slowly disappeared, occupying months in doing so, the reason for the unusual length of time required being that only one application instead of three could be made, owing to the patient residing at a distance.

In another case of the same affection, the patient being a minister, all the symptoms disappeared in a few days. In this instance the treatment was continued upwards around the neck and throat, and the resulting pustules were of very large size.

Heart.

Where the heart's pulsations are irregular an improved action is the common result after two or three applications on the chest. When the treatment is adopted for affections of the heart only a special course has to be observed, which is alluded to elsewhere.

Liver.

Many affections of the liver and spleen, whether pain only, congestion, swelling, inflammation, or icterus, when not due to the blocking of the ducts by a foreign body are relieved after a free discharge of pus. In such cases the constitutional disturbance which is set up during the discharge may be of a marked character.

Intestines.

In cases of chronic constipation, the intestines have resumed their proper function two or three weeks after a discharge of pus from the abdomen. Intestinal catarrh, chronic dysentery, and chronic diarrhœa, have promptly disappeared, while the more prominent symptoms are allayed in a few hours. In

Dysentery.

a case of severe dysentery of long duration, every symptom disappeared from the time of the first application of the Treatment on the back and abdomen. In a case of catarrh of the intestines a similar result occurred, also in various cases of diarrhœa. The discharge over the abdomen in such cases is usually profuse.

Kidneys.

When the function of the kidneys is impaired, or almost arrested, as in ascites and other forms of

dropsy, the effect of the Pyonex Treatment is at times somewhat surprising. In one case of general anasarca in which the patient had apparently only a day or two to live, their function was restored within two or three hours. This result was due in part to purulent expulsion and in part to the stimulant action of the oil on the body of the kidneys. The patient rapidly recovered. In another case of less severity, a moderate discharge of pus was followed by a return of the kidneys to healthy action in a few hours, and the subsequent relief of the patient.

Anasarca.

In various cases of amenorrhœa of a chronic character, the menstrual flow has returned, after a discharge of pus from the hypogastric region. In one severe case the uterus resumed its function in three hours, and in another in forty-two hours. In each of these cases the usual discharge of pus took place on the third day. In many cases where no children were born after years of married life, the uterus has become gravid soon after the discharge of crop after crop of pustules from the abdomen.

Uterus.

Amenor-  
rhœa.

Gestation

In several instances of impotency, where the spermatic cord was invaded by purulent infiltration, the sexual powers have been restored after successive crops of pustules have been discharged over the whole surface of the abdomen. In one case the powers had been lost about eight months, the patient suffering from locomotor ataxia; in another case of the same affection the impotence had existed two years. In a case of rheumatoid arthritis the power had ceased about eighteen months, while in a case of repeated attacks of influenza the impotency had existed over two years, the erector muscles in each

Spermatic  
cord.

Impotence.

case being paralysed. In the first three cases the sexual powers became normal within four weeks, while in the last case about eight weeks were required for their complete restoration.

Bladder. When the bladder is invaded, and has to be emptied every hour or oftener, the diuresis promptly disappears after the discharge of the pus.

Tendons. Purulent infiltration in the tendons resulting in their contraction, is manifested by a free discharge of pus on the second or third day after the application of the Pyonex, the limb usually remaining swollen for two days or more. On the subsidence of the swelling the pain disappears, and the limb can be further extended. The extension of contracted tendons is increased after the expulsion of each crop of pustules until the normal motion is restored. The cases of rheumatism, rheumatoid arthritis and gout in which this has taken place are too numerous to mention.

Bacteria. If we accept the theory that bacteria are developed in pus corpuscles that have lost their vitality, and are in process of disorganisation, we can readily draw the conclusion that all cases of diffuse purulent infiltration of the tissues offer a congenial soil for the germination of bacteria. As various kinds of bacteria have been shown to be responsible for so many of the graver affections of mankind, it would appear that if we withdraw from the tissues the pus that is disseminated in them and their vicinity, we succeed in a measure in sterilising the soil which forms their breeding-ground, and so diminish the liability to the contraction of the said affections.

Soil  
sterilised.

The majority of exanthematous affections appear

to owe their origin to some kind of bacteria, but of whatever variety the minute vegetable organism may be that acts as the exciting cause of a malady of this type, when the Pyonex is applied, it is expelled from the system in the form of pus; the natural tendency being to expel an offending element as soon as the requisite measures are adopted. There is no discrimination on the part of the system as to this or that particular kind of morbid product, it treats them all alike; they are all conveyed to the exit provided for them, and as the expulsion goes on so the symptoms of the accompanying disease wane.

Exanthemata.

Cause removed.

When the rapid formation of pus in any particular locality results in the formation of an abscess, the only thought that is uppermost in the surgeon's mind is to procure the discharge of the contained pus by providing a proper exit whereby it may escape. While there exists a cavity which is filled with such a noxious element, which is daily encroaching on the adjacent parts, we make no delay in providing an outlet, and as soon as the offending matter escapes we look for an improvement in the symptoms. The pain ceases, the inflammation subsides, strength returns and normal health is re-established. The cause of the trouble no longer existing, it dies a natural death.

Abscess.

The action of the surgeon's scalpel and the Pyonex instrument are analogous, the difference being that the one releases a localised collection of pus, while the other facilitates its expulsion from parts in which the pus is generally infiltrated.

The foregoing pages, as well as the clinical history of the pathological cases which follow, appear to lead

Only one conclusion possible.



us to only one possible conclusion as to their etiology. The two main effects of the Pyonex Treatment may be said to be counter-irritation, and the expulsion from the system of all kinds of morbid elements which constitute the exciting causes of disease. We know from experience that counter-irritation alone is not capable of producing such results as those which are herein related, and we are compelled to look for their explanation to another source. The only other effect of this treatment under consideration, is the elimination from the system of certain toxic elements which are responsible for their co-existent disease. On mature deliberation, nothing appears more natural than such a conclusion. The effects of an ordinary application of emplastrum cantharidis help us in the consideration of this point. How rapidly pain and swelling are reduced by its counter-irritation and the expulsion of a serum partially laden with morbid elements! The facts, that the counter-irritation which is produced by the Pyonex Treatment is maintained for a much longer time, and that the discharge, instead of being serum, is pus, are sufficient in themselves to cause us to direct our attention to the attainment of therapeutic results of a more effective character. These results are of such a distinctive and convincing kind, that we are led to the conclusion that diffuse purulent infiltration of the tissues is the cause of the majority of the more serious ailments with which we have to deal.

Comparison.

Blister.

Therapeutic effect.

Conclusions. Degrees of infiltration and virulence of discharge.

We find that the tissues may be infiltrated to a small extent, or by a purulent element of a comparatively innocuous character, as happens in cases where there are no urgent symptoms that call for the

aid of the physician ; and we find on the other hand that the multiplication of the pus cells may be carried on so freely that not only is the involved tissue highly charged with them in every part, but that the invading pus is of a decidedly virulent nature. We also find that between these two extremes we may meet with every degree of infiltration, and that the morbid element may range from a thin semi-transparent character, as found in mild complaints, to any degree of thickness, viscosity and virulence, as met with in the more dangerous types of disease. The one main effect of the Pyonex Treatment being to withdraw from an affected tissue the morbid matter which invades it, we therefore conclude that the new set of improving symptoms which forthwith supervenes is referable only to this fact. And as in the case of the abscess no relief is obtainable until the discharge of the contained pus is effected, so in cases of diffuse purulent infiltration we are so often baffled in our attempts to alleviate the sufferings of the patient, because the exciting cause of the affection still remains in the tissues, and the system, while unaided, is unable to get rid of it.

Effect of  
treatment.

Abscess.

We are further led to conclude that in order to restore health and tone to an infiltrated tissue, it is necessary to eliminate from it all purulent matter ; by its presence it destroys the natural function of the part, it promotes atrophy, it causes pain, it is responsible for every degree of congestion and inflammation, and the morbid symptoms which are induced by it find their limit only in the vocabulary of a medical dictionary ; while in cases where its rapid propagation continues an uninterrupted course, the victim of its ravages finally succumbs.

Conclusion.



The numerous and remarkable therapeutic results which are attained by the use of the Pyonex Treatment, appear to leave us no alternative but to acknowledge that the one great primary cause of disease is diffuse purulent infiltration, and that the affections which we treat under the designation of a varied medical nomenclature are but its symptoms.

#### FLOW OF PUS TO THE PART TREATED.

When a Pyonex Treatment is made to any part of the system, the glow which immediately follows is caused by a partial diversion of the arterial currents in every part of the frame to this particular spot. Corpuscles of various kinds of impurity, together with pus cells, become drawn into the currents and are thus rapidly conveyed to the part treated. We know, as a matter of fact, that in the course of therapeutic appliances the lesser irritation is drawn to the greater: in the present instance a certain percentage of the stimulating oil remains in the tissues which are perforated by the application, while a certain smaller percentage of the oil is carried by the circulation to distal parts. The stimulating effect of this oil, together with the increased rapidity of the arterial currents, appears to operate in breaking up and loosening the pus cells from the invaded tissues, which leads to their conveyance to the part treated.

## THE DISCHARGE.

AN ACCOUNT OF THE DISCHARGE PRODUCED BY THE APPLICATION OF THE PYONEX INSTRUMENT—ITS QUANTITY, CONSISTENCE, COLOUR, COMPOSITION AND OTHER QUALITIES—IN SEVERAL AFFECTIONS.

There are several points of interest connected with the varied characters of the discharge. We notice marked differences in its colour, quantity and consistence; the colour and consistence at times being peculiar to the specific disease under treatment, and the quantity varying in a surprising manner, while there is no apparent reason for the variation. Colour and consistence.

*Quantity.*—In chest diseases, such as asthma, bronchitis and pneumonia, the discharge is usually copious, the pustules being of good size and well filled with yellow pus. In severe cases the pustules may be confluent, resulting in the formation of a sac of pus at each perforation made on the parts which are more involved by the disease. Except in few cases, the great outflow of pus occurs after the first and second applications; after which a gradual diminution may be noticed, which continues until there is a total cessation. In a case of lupus exedens, a case of blood poisoning by tanning, and a case of eczema on the face, the quantity was minute and gave rise to doubts as to a prospective benefit, though in each case, as it turned out, perfect relief was Quantity.  
Chest diseases.  
Confluent.  
Lupus.  
Eczema.

Rheumatism.	attained. In diseases of the joints, such as rheumatism, and rheumatoid arthritis, only a moderate discharge is to be looked for, while in some
Serous.	varieties of eczema it is serous and very abundant, and continues for several days to be expelled by rapid exudation. The most profuse and rapid discharge
Hydrothorax.	may be looked for in hydrothorax, where two pints or more of serum may be expelled in three or four
Ascites.	hours. Also in ascites there is an active exudation through the artificial pores made by the instrument.
Ataxia.	In cases of locomotor ataxia the discharge is, as a rule, of usual quantity, but in one very severe case not only were the pustules confluent at the perforations of the instrument, but those which were thrown out between the perforations were so numerous that the whole of the integument was completely covered, and they increased in size so as to invade each other, as well as the confluent sacs which had formed at the perforations ; the result being that the whole of the surface treated was subcutaneously covered by pus.
Composition.	<i>Composition.</i> —The basis of the discharge, with few exceptions, consists of morbid pus which has characters of a distinctive kind whereby it differs from the healthy pus of a granulating wound. In
Irritant.	many cases it is of a highly irritant nature, and when it reaches the integument a transient inflammatory process is set up. The whole surface becomes red and hot, and the superficial inflammation may continue for twenty-four hours or more. In other cases it is of a mild nature and does not produce the smallest reddening of the cuticle.
Chalk.	In cases of chalk gout the discharge which results

from the perforations which are in proximity to the chalky deposits is laden with the *calci carb.*, which communicates to it a mixed white and yellow appearance.

In some cases of gout after the expulsive action is well established, the discharge changes from a dull yellow colour and becomes quite dark, verging on black, the dark colour being due to the large percentage of gout toxin, which is secreted by the gout bacillus. While this expulsion goes on, if there be blue discolouration of the skin of the patient it rapidly disappears. In gout.  
Uric acid.

The discharge may be nearly black at one part of the system while it is yellow at another, the difference in the colour depending on the one part being more highly charged with gout toxin than the other. As in gout, the feet and lower extremities are usually first attacked; the uric acid is stored in larger quantity in these parts than elsewhere, owing to the presence of more gout bacilli. This is shown by the fact that an application to the back or chest may produce pus of a yellow colour, while from the thighs and legs the discharge is almost black. When the discharge assumes this dark colour, the toxin and bacilli which constitute the exciting cause of the affection are being rapidly expelled from the system, and, concomitant with this, the symptoms and swollen joints are disappearing. Black and  
yellow.

When a part is invaded by purulent infiltration decomposition of the pus may set in after a lapse of time, the resulting noxious gases being partially absorbed by the surrounding tissues. While the artificial pores are being made by the Pyonex instru- Noxious  
gases.

Decom-  
posed pus.

ment, a part of these gases escapes through them, and their odour is such that they may be distinctly perceived by a person who stands near by. The resulting discharge in such case is somewhat pestiferous and composed largely of broken up decomposing pus corpuscles. When the process of decomposition has proceeded a step farther the fluid portion is absorbed, and the disorganised remains of the cells become conglomerated into masses which are of a cheesy consistence, owing to the fatty degeneration of its cells. On an application of the Pyonex in such instance, the resulting discharge, instead of being the usual liquid pus, may consist of solid grains which are circular in form, of the consistence of cheese, and about the size of mustard seed. When this stage of decomposition has overtaken purulent infiltration, it is usually accompanied by a great wasting of the adjacent soft tissues.

*Consistence.*—The discharge may at first be gaseous as above stated, and of a noxious character, or it may be quite fluid, as when bullæ are formed or when cases of pleurisy and dropsy are treated. It may range from this fluid consistency to thin, thick, glutinous, or creamy, or it may be as stated, perfectly solid.

Consist-  
ence.

In mild  
cases thin.

The great majority of cases yield pus of the ordinary yellow colour and consistence. We never look for pus of a thick and virulent nature in mild diseases. In cases of general indisposition, for instance, the discharge is distinctly light coloured and serum transparent, although it may be quite abundant. When any part of the system has been the seat of severe pain for a considerable time a copious



and thick discharge may be looked for, the pustules <sup>In severe, thick.</sup> probably being confluent; but if the pain be not severe and of recent date the pustules will not encroach on each other nor be of large size, and the pus will not be thick or well coloured.

The consistence of the pus which is discharged <sup>Ratio.</sup> bears a ratio to the severity of the affection. And the same may be said as regards its quantity and colour, allowing for exceptions in exceptional cases. The solid discharge alluded to would never result, <sup>Solid.</sup> except in a case where the progressive steps of purulent decomposition had sufficient time to be effected. In one case the pus was sufficiently viscid and thick to form balls not quite so large as peas, <sup>Balls.</sup> which could be rolled about.

It is a common occurrence for a second crop of <sup>Creamy.</sup> pustules to appear on the fourth or fifth day after an application. These are sporadic and always of large size, and their contained pus is usually thick or even creamy.

In chronic cases, especially of affections of the <sup>Exudation.</sup> chest, the discharge may continue for weeks after the usual time. In such instances a gradual exudation of morbid purulent matter is kept up through the artificial pores. As it is expelled it dries up, so that the entire perforation becomes covered with a thin scale. As the exudation continues this scale is <sup>Scale.</sup> pushed up and another one is formed under it. This process is continued until quite a thick crust is formed, <sup>Crust.</sup> which is friable and easily removed. After its removal another crust may form of smaller size and somewhat lighter shade. The quantity of morbid impurity expelled in this manner sometimes exceeds



that which is contained in the pustular eruption, which matures on the third day after the application.

### Colours.

*Colours.*—The colour of the discharge may be a light yellow, as in cases of general indisposition, or a deep bright yellow as in cases of psoriasis. It may be quite white as in lupus exedens, or nearly black as in gout. It may be distinctly greenish and pestiferous as in chronic eczema, and greenish without being pestiferous in diabetes. It may also be red and of a very irritating character in many diseases. The following table denotes various kinds and characteristics of the discharge.

TABLE SHOWING VARIOUS CHARACTERISTICS OF THE DISCHARGE.  
*The figures denote the different kinds of the discharge in different cases.*

DISEASE	COLOUR	CONSISTENCE, &c.	QUANTITY	COMPOSITION, &c.
Eczema... ..	Light green or yellow	(1) Thick ... (2) Pestiferous	Copious ...	(1) Large pustules, or very small. (2) Pestiferous.
Diabetes ... ..	Green tinged and yellow	Viscid ...	Copious	—
Gout ... ..	(1) Nearly black (2) Yellow (3) Dark	Thick ...	Ordinary ...	Uric acid and pus.
Chalk gout ... ..	Mixed white and yellow; colours distinct	Thick ...	Copious ...	Pus, loaded with carb. calcii
Locomotor ataxia	Yellow ... ..	(1) Very thick (2) Ordinary	(1) Very copious (2) Usual	—
Lupus exedens...	(1) White, opaque (2) Yellow	Creamy ...	(1) Small (2) Usual	—
Blood poisoning by chemicals	(1) Greenish-white (2) Yellow	Fluid ...	Copious ...	Pus and salts of potash & soda.
Blood poisoning by tanning	Brown ... ..	Cheesy ...	Very small	—
Rheumatism ...	Light yellow ...	(1) Thick rolling balls (2) Usual	Usual	—
Rheumatoid arthritis	(1) Light or ... (2) Yellow ...	(1) Solid, cheesy (2) Usual	Usual ...	Decomposed pus corpuscles.
Psoriasis ... ..	Bright yellow ...	Usual ...	Profuse	—
General indisposition	Light yellow ...	Thin ...	Abundant ...	Fewer pus cells.
Ascites and anasarca	Light yellow ...	Watery ...	Abundant ...	Water and serum.
Pleurisy ... ..	Light yellow ...	Serous ...	Pints or quarts	Serum.

## CHAPTER IV.

### *EXPULSION OF PUS.*

#### UNAIDED EXPULSION OF PUS.

IT is a matter of every-day occurrence for pustules <sup>Expulsion of pus.</sup> to appear on the face and neck especially, and on other parts, and since we here have proof that the natural powers and tendency work in this direction, what need, it might be asked, is there to make artificial pores and apply stimulating liniments? This invaded expulsion is carried on without our interference, and the offending elements are eliminated by a natural process.

Our answer is the following :—

Whenever pustules are discoverable about the face <sup>Diagnosis.</sup> or neck we need be in no doubt as to our diagnosis and prognosis ; and in many cases when the symptoms leave us in some uncertainty as to the exact nature of the trouble we examine the back. If we find isolated pustules or small red spots or macules, we have no hesitation in coming to a decision that our patient is suffering from purulent infiltration. The vitality of the system is lowered by the presence of impurity, and it has not sufficient strength to break up, dislodge and expel it. The pustules that are thrown out may be taken as a proof of the existence of a quantity of morbid material that lies under-

Help  
needed.

neath, and that help is needed to enable the system to expel it.

### THIS NEEDED HELP

is supplied by the application of the Pyonex.

Absorption  
of the oil.

The stimulating oil which is applied to the artificial pores is partly absorbed into the system and enters the general circulation. Its absorption is apparent at the time of the application, as after the first passes of the brush it disappears. But the tissues which first receive the oil are the more highly charged, and a gentle counter-irritation is produced and continued for about forty-eight hours.

Effects pro-  
duced by it.

This action is analogous to that of a blister or mustard poultice, but pus is expelled instead of serum, owing to a longer time being given for nature to do its work.

Circulation.  
Pulse.

Also the oil, which is of a stimulating character, communicates to the system, and especially to the circulation, increased activity. This activity is manifested by the increased frequency of the pulse, which rises from 75 to 80 or more, according to the extent of surface covered by the application. This increased activity and strength enables the system to accomplish what it could not do before. The result is, the discharge of the pus.

Toxins  
expelled.

We have already remarked that by the aid of the microscope it has been ascertained that the exciting cause of typhoid fever, *i.e.*, the typho-toxin that produces the affection, is due to a bacillus. The oil, while circulating with the blood, comes into contact with every tissue in the system, and while doing so a strong expulsive action is set up and the toxins are

driven from their strongholds and collected in masses of irritant poisonous pus on that part of the integument which is covered by the Pyonex application.

### EXPULSIVE PROCESS—NATURAL.

The natural expulsive process is best exemplified in the case of variola. The highly toxic cause of this disease, the nature of which has not been discovered, finds its way into the system through the atmosphere which is breathed into the lungs. It is of such an insidious nature that it rapidly invades every part of the body. During its period of incubation, which varies from four to fourteen days, according to the virulence of the toxic agent, an active pus-forming process is carried on in almost every part.

Although a minute bacillus has been discovered by Klein in the lymph of variola, it does not appear to exist in sufficient numbers to enable a conclusion to be come to that it is intimately concerned in the production of the pus which is the main characteristic of the disease.

Pus cells appear to be formed in the tissues by the inflammatory action which is set up by the presence of the toxic agent. But although a stage of diffuse purulent infiltration is thereby set up in the tissues, there does not appear to be any tendency to the formation of internal abscess, as in certain other affections. The natural forces have the power which is necessary to deal with these pus cells, and expel them from the more central parts towards the integument, where they appear in single or confluent pustules, according to the degree of infiltration.

The excessive quantity of purulent matter which is formed in the blood and tissues, and its decidedly virulent nature, would lead us to conclude that almost all of those who are attacked by variola would succumb to the baneful effects of the disease if this purulent element remained in the system. The merciful expulsive process which is exercised by the natural forces must be credited with the resolution of every case where life is preserved. But there is a limit to its power.

Adequate  
and  
inadequate  
to  
save  
life.

When the degree of purulent infiltration is only moderately high, and the character of the virus is not exceedingly toxic, the natural forces are sufficient to cope with the circumstances in an effective way. The pus is driven to the surface, the intestinal tissues are relieved of the virus, and resolution sets in. But when the pyogenic powers of the toxic agent are exerted to the greatest extent, such as takes place when the virus is copious in quantity and of a very malignant nature, the formation of pus is so rapid that the integument becomes crowded by confluent pustules owing to the large quantity of pus which is being expelled. The effort and high fever which are involved in this expulsive process contribute to the exhaustion of the strength of the patient, and as the formation of virulent pus cells in the tissues is exceedingly rapid the natural forces are overwhelmed, the purulent element cannot be expelled with sufficient expedition, and consequently the full effects of the ever-increasing virus are vented on the tissues and internal organs, with the quick supervention of a fatal termination.



## THE EASIEST EXITS, HOW AVOIDED OF.

The eruption that comes out during the progress Exits. of small-pox makes its first appearance on the face and about the lips, then on the neck and wrists, and afterwards on the arms, body and lower extremities ; but if there be a sore, abrasion of the skin or blister in any part of the body it comes out in that part first.

If we look into this we see good reason why the eruption follows this rule, which at first sight might appear but a caprice or a vagary.

The system is at this time in a highly inflam- Reasons why. matory state, which is induced by the presence of so much poisonous matter in the tissues. It is making an effort to expel this matter. The pores of the skin which covers the face and lips are more open than Face. those which are in any other part of the body, a fact which is mainly due to the more frequent ablutions which this part receives. Hence the morbid matter is more easily expelled at this point than any other. The next pustules appear in the neck for the same Neck. reason. The next part attacked is the wrist, for the Wrist. same reason that the integument covering it is often washed, and moreover is very thin.

It is true that the hands are cleansed oftener than Hands. even the face, and as regards the weight of the present argument, it might be urged that the eruption ought to appear in them first. But here there are other considerations. The hands mainly consist of bone, tendon and fascia, which are impervious to the morbid matter ; and further, the integument which covers them is so thick and tough that the purulent matter cannot be forced through them.

But where there are blisters or other abrasions of Abrasion.



the skin, there is in fact an open door. It is only natural that such point should be the first place for the matter to escape from.

Natural  
tendency.

It is interesting in this connection to consider the great natural tendency with which our system is endowed to expel all kinds of impurity which lodge in it, and especially such products as are of a morbid character. Its provisions for the accomplishment of this end are manifold and marvellous, and bring back to us the force of the truth that we are fearfully and wonderfully made. We may now glance at the

Exits.  
Scalp.

natural exits from above downwards, *e.g.*, the scalp. The dry dust or scurf which is so constantly thrown out, is the outcome of a purely eliminative action, which rids the system of an impurity. If suddenly checked the head becomes stuffy and the nostrils swollen. The bran scales of pityriasis which cover the scalp, are another instance of its serving as an exit for a morbid product.

Conjunctiva.

*The Conjunctiva.*—The two surfaces which it covers, the front of the eye and the inner surfaces of the lids, are constantly utilised as exists for purulent matters. In ecthyma of the face a quantity of pus is expelled between the lids, which on drying glues them together, while there is almost constantly being thrown out a thinner discharge of a purulent nature, which is increased or diminished according to the more or less severe strains of the daily use of the eyes.

Nares.

*The Nares.*—Here the discharges from the mucous membranes may be solid, ropy, or aqueous, each being expelled by Nature as an impurity that existed in the surrounding tissues.

Even the bad taste that so often collects in the <sup>Lung.</sup> mouth of people out of health, is but another example of the natural expulsive process being employed to thrust out an impurity by way of a mucous membrane.

*The Lungs.*—Every breath exhaled conveys away from the system a certain volume of carbonic acid gas, which is of a decidedly toxic character. In addition to this the lungs act as purifiers to the body whenever an excess of alcohol is taken into the system, and in other ways tend to preserve the purity of the blood.

*The Kidneys.*—The exceedingly toxic urea is <sup>Kidneys.</sup> eliminated only by their agency; also the gout crystals of uric acid. Many other substances, among which may be mentioned alkalies, acids, lithates, purpurates, iridescent films, &c., constitute the kidneys essential cleansers of the blood.

*The Intestines.*—In addition to their natural <sup>Intestines.</sup> functions, all kinds of extraneous and foreign toxic bodies are expelled by increased action, when by their presence they endanger life and health.

*The Skin.*—We scarcely realise that the skin, by <sup>Cutis.</sup> its quiet and imperceptible action, is constantly removing from the system an element which is sufficiently toxic to destroy life in a few hours if the eliminative action is totally checked. This fact was proved when two little boys whose bodies were gilded all over for <sup>Little boys.</sup> a procession in Rome, died the same day. By the medium of the sudorific glands every kind of impurity is expelled from the system. All kinds of eczemas and skin symptoms, boils, bullæ and toxic elements, are thrown out. An interesting case in point is that of a physician to a fever hospital in the United States

Physician  
of fever  
hospital.

who was conscious on various occasions of having taken typhoid infection. As soon as the warning symptoms were unmistakable, he mounted his horse and galloped away in the hot sun, and by taking copious libations at every town and village, kept himself in a bath of perspiration for several hours. The quantity of fluid expelled from every pore so cleansed the blood of the typhoid germs, that on the following morning all his threatening symptoms disappeared.

Hot mud  
baths.

There is another instance where this kind of expulsion is daily used to cure diseases. In California a stream of hot fine mud coming from a hill is availed of when collected in suitable tanks. Patients are kept for several hours in this hot mud, and while there are made to drink huge quantities of wines, spirits, and other fluids. The skin action is so brisk and the quantity of imbibed fluid so great, that every tissue in the body becomes literally washed out. On the conclusion of the bath the patient has to be lifted out, cleaned, and put to bed, where he remains for some days to recover his strength. Many chronic ailments, including those of a syphilitic nature, are thus cured by one bath.

Turkish  
bath and  
typhus.

I well remember the case of a medical student who daily attended for several hours at a house where two patients died of typhus fever in the same week. Several days subsequently he had the premonitory symptoms of the fever. It had been feared by his friends that he would contract it. The one idea that became impressed on his mind was that he must take a Turkish bath. He perspired profusely in the bath, and on awaking the next morning had no further symptoms. He and his friends were convinced that the bath saved him.

We can never sum up the illnesses and deaths from which men are saved by the expulsion from the system in so many ways of the multitude of toxic elements that are constantly finding their way into the blood and tissues. And we cannot deny that it is owing to the fact that our natural body is endowed with so many exits and such remarkable expulsive powers that our life and health are so wonderfully preserved.

Life pre-  
served by.

In looking into the action of the Pyonex, as its name implies we find that it is an exact imitator of Nature's methods. It cannot be said that it involves a new and dark theory in the display of its remarkable powers in the prevention and cure of the most virulent and intractable diseases. There is nothing hidden or difficult to understand in its action. All is open and above board, there is the total absence of empiricism, for we see day by day and hour by hour what is going on; we watch the process of expulsion and the extinction of the exciting cause, while at the same time we are witnesses of the death and total destruction of the dreaded disease.

The  
Pyonex, an  
imitator of  
Nature's  
methods.

Another interesting and instructive case may be mentioned by way of illustration.

A patient had disease of the metatarsal bone of the great toe of the right foot. He had been on crutches for years. It was extremely sensitive to the touch and there was not the smallest sign of improvement. It had long been impressed on his mind that it would do good to apply water fomentations. He had an accident by which the acromion process of the right scapula was fractured. It was set various times and finally secured by plaster of Paris bandages

Diseased  
bone.

Fracture.

Twelve  
months'  
position.

around the body and arm, which soon became about as hard as a board. This was worn for twelve months, during which time the patient never left his bed and never lay on either side, but only on the back. By means of a pillow under the thighs and keeping in a partially sitting position he was always perfectly comfortable. He awoke in the morning in the exact position in which he fell asleep, and even then had no desire to shift or turn. Now

Hot fomen-  
tations.

came the opportunity to treat the foot. It was well enveloped in cloths made wet with hot water, so wet that the water ran about the gutta-percha tissue which enclosed it. The cloths when removed night and morning had a distinctly disagreeable odour, and the water in which they were washed was yellow. The foot had to be well washed with soap every time the cloths were changed, in order to remove the very irritating matters which were thrown out. An extraordinary plexus of prominent veins formed around the bone, and there was great vascular activity. Dark pustules of an exceedingly painful nature were expelled, while the diseased bone was plainly being reduced in size.

Diseased  
bone.

After about three weeks of this treatment, the foot, which had not been used for three or four years, was so far restored that it could be placed on the ground on the outer edge, and the patient slowly made his way across the room. The treatment was kept up for some months, the foot all the time gaining strength. Finally, it was completely restored and became as well as the other one.

Resolution,  
how caused.

In this case resolution was due entirely to the inherent expulsive power of the system. While un-



aided, however, it was powerless, but when warmth and moisture came to its assistance, every pore was opened and the diseased bony tissue was gradually cleansed from its morbid products, which were all eliminated or thrust out through the pores. The warmth and moisture did here precisely what the Pyonex Treatment does in other cases; it afforded the aid which the system needed in order to put its expulsive power to work.

All the foregoing are so many ways by which nature is endowed to enable it to rid the body of effete and morbid products. We are indeed led to the conclusion that no effort is spared on its part to treat all germ-bearing elements in this manner. Nature's powers are promptly called into action to thrust out the deleterious products, and it is owing to the great measure of success which crowns its efforts that our lives are prolonged with health and happiness.

Nature's  
endow-  
ments.

But experience teaches us to draw a line of demarcation. This line is, in fact, determined by the limit of Nature's powers. In our daily practice as physicians we help a weak heart by prescribing suitable tonics, we unload a congested liver by cholagogue and cathartic remedies, we help the kidneys by diuretics, we help the torpid intestines by promoting peristaltic action, and the skin action by promoting diaphoresis. But while in a condition of health none of these organs require our assistance. So also the natural expulsive power, with which the various parts of the system are provided, is sufficient for the purpose of preserving the body in health and good working order under ordinary circumstances; but it does not

Limit.

We help the  
weak part.



Power limit. extend far beyond this point. When, for example, a toxic element laden with disease suddenly invades the body, the natural expulsive powers, though taxed to their utmost, are inadequate to meet the case. The impervious envelope of the skin but too often forms a barrier, its pores being blocked up during the high symptomatic fever, and there being no outlet for the toxic germs, they vent all their destructive effects upon the body. At this critical moment we come to the help of Nature's checked powers. We quickly make artificial pores in the impervious integument and the needed exit is provided. We apply a mildly stimulating oil, which by its genial counter-irritation completes the requisites by which an active expulsion of the toxic germs is promptly commenced and carried on, and so the system is saved from their ravages.

Required  
aid pro-  
vided.

Before concluding this subject, relating to the marvellous powers with which our divinely formed frame is endowed by the all-wise Creator, for the expulsion from its various parts of toxic elements which have inherent qualities capable of destroying life, we will take still one sample further, while we do not overlook the fact that the same laws which apply to this case will include a great many others.

Typhoid. We allude to the disease of typhoid fever. To begin with, we have a short motile bacillus, which has found its way into the solitary affected follicles, in Peyer's patches, in the tumid mesenteric glands, and in the spleen. The bacillus rapidly multiplies, and while doing so secretes a poisonous product, which, we denominate typho-toxin. Typho-toxin is of such a virulent nature that it is capable of destroying life

Typho-  
toxin.

in a few days. Its attack in any part may lead to the disorganisation of that part. It perforates the intestine, inflames and softens the spleen, the lungs, larynx, liver, kidneys, and other parts are rapidly invaded by it, and swelling, inflammation and abscess may be developed. While these steps are proceeding with rapidity, a great effort is set up by the natural forces to destroy and rid the system of this fatal toxin. An intense symptomatic fever is created. The blood is pumped through the lungs with extraordinary rapidity; by means of the rapid respirations a greatly increased volume of oxygen is passed through the lungs, and every wave which comes from the right ventricle, bearing blood which is highly charged with the destructive typho-toxin, returns to the left ventricle after a certain percentage of its virus has been eliminated or burnt off. Every respiration does its work, some toxin is destroyed and got rid of. The consuming and exhalation process goes on at the utmost speed from day to day, until, as happens in favourable cases, the whole frame is freed from the baneful exciting cause, and every organ resumes its wonted functions. Our feeble efforts to combat the disease are as nothing when compared to Nature's self-eliminating process. We contemplate the process, and our souls are filled with a sense of the inscrutable wisdom and mercy which endued our mortal bodies with such self-preserving qualities.

Efforts to  
expel it.

Typho-  
toxin  
eliminated.

And not only typho-toxin, but any other impurities of a kindred nature that are at the time floating about the system are dealt with in the same manner. There is no distinction of the kind of toxin, for Nature knows of no discriminating laws when engaged in such work.

Other  
toxins.

So that when resolution is effectively established in good cases, the cleansed system is in a better condition than before the disease was contracted.

And may we not include all symptomatic fevers in the same category? There appears to be no reason for the contrary, so we are drawn to the conclusion that all symptomatic fevers are but instances of Nature's great expulsive powers.

#### AN APPLICATION.

4,000 pores.

Early  
application  
vital.

By the application of the Pyonex, four or five thousand artificial pores, more or less, are made on the surface of the body. These pores are kept open by the oil which covers them. Every pore is an exit by which morbid elements may escape without obstruction. How it recommends itself, therefore, to one's reason to apply the Pyonex at once in cases where the symptoms furnish evidence that a virulent poison has been received into the system, which may terminate life in a few days. Let the deadly element have all the channels of escape we can give to it, let it be got out as quickly as possible. The sooner it is out, the sooner the danger is past and the patient is convalescent. If we let it remain it may quickly multiply and destroy life by its noxious secretions, while an unsuccessful effort is being made to expel it by the unaided natural forces.

#### ARE THERE OTHER METHODS OF EXPULSION EQUAL TO THE PYONEX?

Expulsive  
powers  
unequalled.

An answer to the question is scarcely needed. We know of none. We may take it as sufficient proof that there is no treatment of the kind in

general use. There are certain drugs which, when compounded with ointments and applied to the skin, will produce eruptions; but they do not cleanse the system of impurity. They will produce pus on a person in perfect health, and their counter-irritant effect bears but a small resemblance to that of the Pyonex. The action of an ordinary blister of Spanish fly, perhaps, comes nearer than anything else to the effect produced by the Pyonex; but it falls far behind in its beneficial results. If we consider

#### THE PYONEX AS A COUNTER-IRRITANT,

we are able to apply it, when circumstances require, over twenty times the surface of that of a blister. We can apply it over the whole of the chest and abdomen and back, while a blister can only be applied to an isolated spot. Extent of application.

The Pyonex Treatment has a decidedly counter-irritant effect, which is greatest at the moment of application. It produces a marked warmth and glow over the part treated, making the skin red and vascular, while a blister is applied cold and works without producing the sensation of heat. The Pyonex continues its counter-irritant effect for two days and nights; a blister for one night only. Compared to a blister.

The Pyonex causes the expulsion from the system of thick poisonous pus, while a blister draws out only the clear serum of the blood. Pus instead of serum.

The Pyonex raises pustules, leaving the integument between them entire and unbroken. A blister destroys the integument over the entire surface covered by it, and some days are required for the part to heal.

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 COMPARED TO A BLISTER.

Blister repetitions.	A blister requires to be repeated over the same spot various times in order to produce a beneficial effect equal to one application of the Pyonex. These applications are, moreover, so painful that they are
Bullæ.	strenuously opposed by the patient. The bullæ which are raised, the total disorganisation of the epidermis and the time required for the healing, are disagreeable features connected with the blister. But the main feature which causes the great dissimilarity in the quality of the counter-irritation caused by the two processes, may be said to be due to the fact that in a blister the application of the vesicating material
External.	is made on the external surface of the cutis only; while in the case of the Pyonex the stimulating oil
Pyonex and deep tissues.	passes through the artificial pores into the subcutaneous tissue, and produces a counter-irritation which makes its way even to the deeper layers of the adjoining parts.

No empiricism.	The Pyonex treatment may pre-eminently be called a treatment of common-sense. The reason why it benefits is so simple that a child can understand it. It, moreover, entirely lacks the character of empiricism which is inseparable from much of the treatment to which recourse must be had in the everyday treatment of disease. It furnishes us with the satisfaction of not only watching the improving symptoms of the patient, but of witnessing the exact operation to which the improvement is due.
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## CHAPTER V.

### CONTRA-INDICATIONS.

#### AFFECTIONS WHICH MAY BE RELIEVED BY THE PYONEX TREATMENT.

IT is naturally a matter of interest to those who are unacquainted with the Pyonex Treatment, to know in what diseases the treatment may be specially useful. This query is, to a great extent, already answered in the relation of the cases that have been relieved by it which is given in this work.

But there being so many diseases which are not mentioned as having been treated, we may briefly advert to the classes of ailment in which there is reason to believe that good results may be obtained.

The one rule which we may take for our guidance Rule. appears to be to satisfy ourselves that any particular ailment which we may wish to treat has a specific exciting cause which may be dislodged and expelled from the system.

All classes of fevers which are known to have Febrile affections. their origin in poisonous gases of any kind, inasmuch as the toxic element has not remained long in the system, and has not settled in any particular point, but may be taken as being generally disseminated through the blood and tissues, may therefore be considered as likely to be effectually and promptly relieved by the treatment. In such cases the offend-



ing element is cleared out of the system in a rapid and effective manner. The cause of the symptoms being no longer present they wane and disappear.

Prevention. If the treatment be applied before the graver symptoms supervene, the progress of the disease is cut short at that point, and resolution is established. The exciting cause is expelled before the period of incubation has terminated, and as there is nothing of a toxic nature left in the system there is no further trouble.

Typhus and typhoid may be included under this heading, as also scarlatina, rubeola and variola, and any other of the exanthemata ; also diphtheria, intermittent and relapsing fevers, and all others of a similar type. Several of these affections are known to be due to the presence of bacteria in the blood and tissues, and in all probability they are all dependent on a similar original cause. The great object in all these cases is to apply the treatment, if possible, during the period of incubation, there being a remarkable readiness on the part of the system to expel all such exciting causes as soon as an adequate outlet is provided, combined with the subcutaneous absorption of the stimulating oil.

Gout and  
rheumatism.

In gout, rheumatism and rheumatoid arthritis, the treatment has been proved to be of marked value. In cases of gout the discharge is at times of dark colour and laden with gout bacilli, toxin and uric acid ; while in rheumatism and rheumatoid arthritis the acid exciting cause is freely expelled and the affected joints quickly begin to show improving symptoms. In certain cases of rheumatic diathesis where pain, unaccompanied by other symptoms, appears to be

the cause of the affection, an immediate and complete restoration may at times be effected, which may be said to be due rather to the counter-irritation, which is produced by the application of the Pyonex, than to the expulsion of a purulent exciting cause from the affected parts.

In the vast majority of skin diseases there is a distinct exciting cause in the system which is responsible for the affection, and in all of these there is every reason to expect a good result from the Pyonex Treatment.

The quantity and quality of the discharge which is expelled in the treatment of skin diseases are alike remarkable. The treatment has proved effective in cases of lupus, eczema, urticaria, ecthyma, impetigo, and psoriasis; and there is equal reason for concluding that similar good results would be obtained in other classes of cutaneous affections. There is usually a rapid and free discharge of pus in the treatment of all these diseases by the Pyonex, and the short time in which the affection subsides is marked. But in one case only in which the surface rash appeared to be of an efflorescent nature and travelled about on the skin in an unaccountable manner, although at the commencement of the treatment there were improving symptoms which held out some encouragement, the unusual number of eighteen applications were applied without effecting a cure.

In chest diseases such as pneumonia, bronchitis, asthma, pleurisy, pertussis, incipient phthisis, the beneficial effects produced by the treatment are extremely marked. The perforations in these cases being made in the immediate vicinity of the affected

Skin diseases.

Diseases of the chest.

Pleurisy.

parts, the offending pus which constitutes the exciting cause is quickly and freely expelled. The obvious exception is pleurisy. But in such cases instead of pus, the serum itself which has been effused into the pleural sac is discharged through the perforations which are made by the instrument. The serum may begin to ooze three or four hours after the application is made, and in an hour or two after the pleural sac is emptied and the symptoms of the disease forthwith disappear.

Locomotor ataxia and paralysis.

Locomotor ataxia and the various phases of paralysis being affections of a distinctly neurotic origin, and depending on a more or less morbid condition of the spinal medulla—with certain exceptions—might at first thought appear as unsuitable to be classed among those which would be likely to yield to the Pyonex Treatment. But experience tends to demonstrate that the morbid condition of the medulla is due to purulent infiltration, and further that the purulent element is as freely expelled from this as from any other part. The disappearance of the symptoms and the restoration of the proper functions which follow, lead us to the conclusion that these should be included in the list of those affections which may be relieved by the Pyonex Treatment.

Cerebral and spinal meningitis.

Cerebral and spinal meningitis, which are of an inflammatory nature, pour out quantities of pus on the application of the Pyonex, and the improving symptoms which quickly supervene are evidence of the relief which is afforded by the treatment.

Throat affections.

Tonsillitis, pharyngitis, laryngitis, aphonia, and other affections of their locality, when treated by the Pyonex, have the characteristic of expelling a puru-

lent element in pustules of a large size. As the perforations of the instrument are so close to the affected tissues, the pus has a short distance to travel and quickly reaches the surface. These affections are readily relieved by the treatment.

Dysmenorrhœa, amenorrhœa, and displacement of the uterus, which is due to the relaxed condition of the round ligament; also many cases of sterility or non-conception during several years of married life, for which no cause could be ascribed, have been relieved by the application of the Pyonex. The active counter-irritation and the discharge, which is of small quantity but of an irritant nature in all these instances, quickly results in the resumption of the normal functions of the uterus, and in the case of the round ligament and its adjacent soft tissues being flaccid, they soon resume their natural tonic state, and the uterus is retained in its due position.

Dysmenor-  
rhœa, amen-  
orrhœa,  
sterility, dis-  
placement.

Small  
discharge.

Gastralgia, gastritis, or inflammation of any of the other abdominal viscera, inasmuch as they yield an abundant discharge of purulent matter on an application of the Pyonex, and are quickly followed by improving symptoms of a marked character, are included in the list of affections which are suitable for the treatment.

Gastralgia,  
gastritis.

Copious  
discharge.

Anasarca, ascites, pleurisy, effusion into the joints and kindred affections, are readily relieved by the treatment. In these cases the system has to expel a fluid instead of pus, and instead of occupying two or three days in order to accomplish the operation, it is usually effected in three or four hours. An exception must be made in cases of effusion in the finger-joints in rheumatoid arthritis, when owing to

Anasarca.

Pleurisy.

Hydro-  
cephalus.

Hiccough,  
tetanus.

Sexual  
powers.

Dysentery,  
vesical  
catarrh.

the fluid being contained in sacs of impervious fascia it takes much longer to escape. There appears to be ground for hoping that the fluid in cases of hydrocephalus would be expelled as in other affections of a similar nature, and it would be of interest to watch the result in such cases. Ascites is commonly relieved by the restoration of the function of the kidneys. In cases of severe spasms of the diaphragm, which result in a hiccough which may threaten life, or where in tetanus or rheumatoid arthritis it is impossible to move the inferior maxillary bone, whether the spasm is of a tonic or clonic nature, in every case in which the Pyonex Treatment has been applied the spasm has soon relaxed. The hiccough is relieved by counter-irritation, while in tetanus and rheumatoid arthritis the relaxation takes place after the discharge of the purulent matter.

In several cases where the sexual powers had been lost for many years owing to various causes, they have been completely restored after a few applications of the treatment, while in others where they have been weak they have become natural. Where the failure has resulted owing to disease or the after-effects or sequelæ of a disease, there is room for encouragement that the treatment may be attended by success. But in cases where the glands have been over-taxed, or of simple weakness of the system, the treatment would be contra-indicated.

Diarrhœa, dysentery and intestinal or gastric irritation are quickly relieved, also intestinal and vesical catarrh, a free discharge of purulent matter resulting in each case.

In cases where the muscles are in a shrivelled



state and the tendons are drawn and contracted, the treatment is attended with decided benefit. Both the muscles and tendons become elongated. The resulting benefit, except in rare instances, is not due to counter-irritation, but the improving symptoms begin after the discharge of the purulent element has taken place.

Contracted tendon, &c.

Hæmorrhoids and polypus soon begin to decrease in size under the treatment. The improvement is due in these cases to the expulsion of pus and depletion. The blood supply in each case is so diminished by being drawn away to the part which is treated, that the growths are actually starved and soon dry up.

Hæmorrhoids, polypus.

The treatment has been tried in influenza and its sequelæ, with decidedly encouraging results. In the treatment of the latter copious discharges of pus occur, but in the former only minute pustules. But as there are scarcely two cases alike in this affection, the only way to be sure is to make a test application. The probable causation of the affection is most likely similar in nature to the exciting causes of febrile affections, in which case there is ground for expecting resolution owing to their expulsion from the system.

Influenza.

Various cases of deafness have been relieved ; in most instances three or four months' treatment are required, though in some cases relief is obtained in a few days. The discharge is usually profuse and is kept up for several weeks.

Deafness.

#### INSOMNIA.

There are countless persons scattered throughout the land who scarcely know what it is to enjoy a

Insomnia symptoms.



sound night's rest. Some have been accustomed for years to sleep at intervals of varied duration, while the greater part of the night is passed in wakefulness. Others sleep most of the night, experiencing occasional fits of restlessness, while others rarely sleep more than from one to three hours during the whole night.

The majority of such cases are not relieved by medical treatment, and patients have usually a not ill-founded objection to adopt a long course of soothing remedies, which they fear may compel them to continue them indefinitely in order to procure rest.

The exciting  
cause.

The exciting cause of insomnia may be attributable to the morbid, irritable, or over-sensitive state of the nervous system, which is due to the presence of impurities of the blood and tissues, except in such cases as nervous exhaustion, which are produced by other obvious causes.

Treatment.

The Pyonex Treatment is particularly effective in these cases. The morbid elements being expelled, the system is left in such an improved state that sound and prolonged sleep is enjoyed.

### **AFFECTIONS IN WHICH THE PYONEX TREATMENT IS CONTRAINDICATED.**

Indication  
for using  
the Pyonex  
Treatment.

The general indication which serves as our guide as to the utility of the Pyonex Treatment in particular diseases, is the fact whether the affection which we are treating be due in whole or in part to purulent infiltration of the tissues.

When we are satisfied that puriform elements in the tissues constitute the exciting cause of a disease, we have good reason to expect beneficial results from the application of the Pyonex.

But although there are various affections of minor importance in which, though no discharge be produced by the application of the Pyonex, we nevertheless get excellent results from its use, there are also other affections in which the treatment is distinctly contraindicated.

In phlebitis, for instance, and other affections of the veins, the application of the Pyonex tends to increase the inflammation, and therefore should not be applied in their proximity. There is, however, no objection to an application being made in other parts of the body where the veins are sound. If there be morbid matter in the system the patient may reap decided benefit from the treatment. Inflammation may be rapidly dispersed owing to revulsion and depletion, and the varicose veins, owing to the improved state of the blood, may diminish in calibre.

In heart affections, as a rule, the treatment may not be used in the general way. It has been stated elsewhere that the effect of a general application is to increase the number of the heart's pulsations about five or ten per minute, whereas the rule in treating such affections is to keep the patient free from all excitement; therefore anything approaching to an extensive application would be likely to add to the severity of the symptoms. But small applications are safe, and may result in marked benefit in rheumatic and other affections involving heart symptoms and endocarditis.

In all such cases the pure or impure state of the system may be ascertained by giving a test treatment of three or four perforations only. If pus

be expelled, the indication is that the system needs an outlet, and the requisite number of applications should then be made, eight or ten perforations at a time to the abdomen and back. A gradual benefit will thereby result, while the stimulating of the circulation will be too slight to cause inconvenience.

Extreme weakness.

In all cases where there is extreme weakness of the system, if it be desired to make an application of the Pyonex, a small test treatment is first made in order to test the power of tolerance of the patient. The extent of the subsequent applications is then cautiously increased, always having due regard to condition of the strength and pulse.

Joints.

It is observed as a general rule not to make the perforations over the joints, such as the knees and ankles, where the bone is covered by the integument. Although the purulent matter expelled from these parts is usually equal in quantity to that which comes from the soft tissues, the inconvenience to the patient is such as to preclude its adoption, some pain being caused.

Erysipelas.

In cases of erysipelas and local inflammations, care is taken not to make the application near to the seat of the trouble. But the effect of a treatment in distal parts is of marked benefit in all cases of this kind. There are other affections in which *prima facie* the application of the Pyonex might be thought to be of much service, but the adoption of

Struma not relieved.

the treatment ends in disappointment. For instance, in strumous affections which are accompanied by swelling of the glands, especially those of the neck, it might naturally be supposed that the cause of the swollen state of the absorbents was due to

the presence of certain impurities which they had excreted from the system. But as a matter of fact, these glands may remain swollen when the system is in a fairly pure state, as far as regards toxic elements. The non-expulsion of pus in such cases, on the application of the Pyonex, is a sufficient corroboration of this allegation. No pus.

This fact tends to show that the strumous diathesis may be of an almost idiopathic nature, and totally dissimilar, in respect to the nature of its exciting cause, to the numerous exanthematous and other diseases for which medical aid is so often required. Idiopathic.

Struma appears to be due to unsuitable food, general debility, cachexia, and poverty of blood—conditions which can only be remedied by suitable medicinal and general treatment. If the lymphatics are not invaded by any morbid element, there appears to be no reason for expecting an improved condition from the application of the Pyonex.

## CHAPTER VI.

### THE PYONEX IN PROPHYLAXIS. DIAGNOSIS AND PROGNOSIS.

#### PROPHYLAXIS.

Hygienic  
measures.

WHEN speaking of measures which have a tendency to prevent disease, we are usually understood to allude to such sanitary or hygienic arrangements as are most efficient in affording protection to the system against epidemic and endemic disease; among which may be mentioned good ventilation, effective sewerage, disinfection, cleanliness, &c. All these are so many external arrangements which tend to surround us with a pure atmosphere. We recognise the benefit of such measures, and shall hail the day when an effective legislation may compel their adoption in all those contaminated precincts in which are congregated the dwellings of the poor.

Atmo-  
sphere.

Ineffective.

But notwithstanding that we avail ourselves of these and such other precautionary measures as may be within reach, we are constantly attacked by every form of virulent disease. This is due to the fact that there are so many ways in which impurities may be formed in the system.

Sterilising.

Some writers have expressed a hope that a day will come, when science may reveal some means of so sterilising the human soil, that it will be incapable of giving productiveness to the germs of disease.

It is true that this has been actually accomplished in some cases, as, for example, the system that is vaccinated is sterilised against small-pox, and the inoculation of the virus of certain contagious diseases, and the employment of antitoxins, sterilises the system against certain affections. But it is beyond the bounds of human probability, that any substance or combination will be discovered that once introduced into the system will make it proof against the attacks of all disease.

Sterilisation  
of the  
system.

Not only are we a long way from possessing an element, or combination of elements, that would be such a boon to the human race, but hitherto we have known of no plan of prophylactic or medicinal treatment which purifies the human system and keeps its tissues in such a tonic condition, that its powers of repelling the attacks of morbid germs are thereby always maintained at their most effective point. Neither have we had at our disposition, a ready means of expelling from the system any blood-poison, which we have reason to fear would be productive of serious consequences.

No available  
treatment.

But in dealing with

#### THE CAPABILITIES OF THE PYONEX

we have to take into consideration these two important points. If it be our object to keep the system in the most perfect state of health, the attainment of this end can only be accomplished whilst the tissues are free from every form of disease. In cases in which there is such immunity, there are no headaches or flying pains, no constipation, unnatural drowsiness, or stupor. The subject is always in

Object.

Perfect  
health.



good spirits and equal to a fair amount of exercise or exertion. The lungs, heart, liver, spleen, kidneys, and other organs are perfect in their functions, and the whole system works smoothly, like a well-lubricated engine.

How  
realised.

By a general application of the Pyonex, every two or three months, this state of health may to a great extent be realised. Whatever exciting cause of disease or poisonous toxins there may be in the system, an exit is thus provided for them, and they are expelled. A few days after the application, the patient realises that every part of the system performs its functions with more freedom; there is a consciousness of comfort, a sense that nothing is wanting; all the tissues take on a healthy tone, as every impediment is removed.

### THE BENEFIT

Threefold  
benefit.

to a person who has the happiness to experience this state, is threefold :—

(1) A perfect state of health.

(2) The absence of a predisposition to contract disease.

(3) If attacked by a disease, there is more power in the system to battle against it.

Second  
considera-  
tion.

The second and more important consideration is the power of the Pyonex Treatment to expel from the system the germs of a disease that may threaten life, or which might, if permitted to continue in it, prove fatal.

We have already noticed that of many of the more serious diseases to which man is subject, each one

has its specific exciting cause, which is invariably of a morbid or toxic nature.

Exciting  
cause.

But when we make use of the Pyonex Treatment, although we may not at the moment be able to discover the exact nature of the morbid element which we are desirous of expelling from the system, the point is a matter of no immediate importance, inasmuch as we employ the same means for the expulsion of all kinds of impurities.

### THE GREAT CHARACTERISTIC

of the Pyonex Treatment is its faculty of expelling every kind of morbid element that may be harboured in the system. The time that each application needs to accomplish its work is about forty-eight hours. The number of applications that may be necessary depends on the state of the system, and the nature of the affections. But as a preventive of febrile and various other affections, one application commonly suffices to ward off danger.

Great  
character-  
istic.

The prevention of disease usually occupies but scant attention in medical works, the reason being that there are so few methods whereby to effect it at our disposal. But in the consideration of the capabilities of the Pyonex, it is a most important item, and cannot be made too prominent.

Important.

The progressive development of the science of medicine has resulted in the discovery of many new plants and mineral combinations which are possessed of healing and other powers. By dint of much research and persistent trials, it has come to our knowledge that great virtues exist in many of these, which were previously unknown.

Usual  
preventive  
treatment  
in fever.

Quinine.

It is customary with many physicians when fearing the advent of some pernicious fever, to administer a large dose of sulphate of quinine, or some other drug of an alterative character, in the hope that the shock communicated to the system may serve as an impediment to its progress. If the morbid element in the system be such as would result in ague, or a mild form of intermittent fever, the end in view may sometimes be gained by such methods.

Jaborandi  
diaphoresis.

But a still more effective plan is to administer pilocarpin, or decoction of Jaborandi leaves, the effect of which is to throw the patient into a profuse perspiration for some hours. The action of the drug is manifest not only on the cutaneous glands, but the salivary glands pour out an extraordinary quantity of saliva, which, in fact, runs from the mouth in streams. The liver, spleen, and kidneys also are stimulated to work with great activity. The amount of fluid thereby eliminated from the system in a short time is surprising.

Effects.

The rapid expulsion from the system of such a quantity of fluid carries out with it the morbid germs which constitute the exciting cause of the disease which threatened the patient. This plan of treatment is very effective. It might naturally be supposed that the strength of the patient would be much reduced by its administration, and it is somewhat surprising to find that, on the contrary, there is an actual increase of strength.

When  
ineffective.

If the toxic element which has been received into the system be such as would produce a pernicious or dangerous type of fever, such as typhus, scarlatina or small-pox, it would be out of the question to

expect to antagonise its effects, by the use of nerve tonics or alternatives, and in such cases the Jaborandi treatment has proved more effective than any other.

But we will take for example the case of a patient Example. who has taken to bed, and we are convinced that he is sickening, say, for typhoid. Typhoid. We are waiting to see if this, or some other type of fever, develops, with Diagnosing. the intention of carrying out in due time the usual Waiting. method of treatment for the specific ailment that presents itself. If our diagnosis prove correct, and typhoid symptoms appear, we deal with it accordingly. But now let us go back and trace what has been going on during the few days that we have been waiting for the maturity of the period of incubation.

There has been the greatest activity in the germ Germ life activity. life. The typhoid bacilli which were received into the system have day by day been multiplying at a prodigious rate ; and as they have been multiplying, so they have been producing their secretion, which we designate typho-toxin, and pouring it into their Typho-toxin. adjacent tissues. This toxin appears to have various degrees of virulence in different cases, and the fate of the patient is dependent on its quantity and quality. All ordinary efforts to save the patient will be of no avail, if the quantity is large and the quality virulent. Our palliative measures may console the patient, but the toxin is doing its deadly work, and no system can escape its fatal ravages when it gets the upper hand ; death soon supervenes.

But being in possession of the Pyonex, we are The Pyonex. able with great advantage to avail ourselves of its prophylactic qualities, and to save life.

Again, taking the patient at the inception of the

Dealing with the exciting cause. attack, we are not obliged to content ourselves by waiting to see if our diagnosis is correct, as to the type of fever that is in process of development ; for though we are unable to determine when or where he received the infection, or what is the exact nature of the morbid element which is passing through its period of incubation, we have the great gratification that we are able to deal with it, and expel it from the system.

Expulsion of the toxin.

Typho-toxin is no exception to the multitude of morbid products that may be expelled from the system by the natural forces, if only the proper measures are taken to enable them to accomplish it. If the alterative treatment fail, or the profuse diaphoresis be insufficiently effective to compass our desires, we have in the Pyonex Treatment exactly the means which we are looking for. By its employment we are able to secure the expulsion from the system of a larger quantity of toxic elements than is practicable by any other known means. When

Effects of Pyonex Treatment.

in such cases we apply a Pyonex Treatment to the back and chest, the profuse discharge of purulent matter from both parts leaves us in no doubt of our having dislodged the exciting cause of the fever.

Profuse quantity.

The pus pours out in such abundance that we are surprised. We have no difficulty in accounting for the serious symptoms which were manifested by the

Short time required.

patient. An important consideration is the shortness of the time which is required to effect this operation. Our patience is not exhausted in waiting for the accomplishment of a slow process, nor are our fears

Process witnessed.

raised that our efforts may be futile. We stand by and see the rapid development of each step ; and in cases



where the pus exists in abundance and its quality is of a virulent kind, it almost appears to one that Nature, from its promptness of action, is endowed with some innate consciousness of the danger that threatens life. All its powers are called to the front. The macular, papular, vesicular and pustular stages of the treatment are hurried through and succeed each other with surprising rapidity, and matured pustules appear in one-half of the usual time. Instead of forty-eight hours which are usually necessary, in twenty-four hours or less a quantity of the life-destroying toxin may be inspected, thrust out from the deeper tissues, and lying under the epidermis, whence it can be instantly removed by means of a sponge. The toxin appears in almost every case in the form of pus.

Rapid  
Expulsion.

And now let us glance at what is happening to the patient during these twenty-four hours. The first effects of the counter-irritation of the perforations on the epidermis is of a comforting nature, the sufferer expressing himself as being somewhat soothed. This feeling of calmness, after about an hour or more, may be followed by a sound sleep. The nap over, there is a marked improvement in the general condition: the brain is clearer, the eye is brighter; and at the time of the maturation of the pustular stage, that is, in from twenty-four to forty-eight hours, according to the type of case, convalescence may be said to have set in. This convalescence is of short duration. In three or four days the patient is up and about. He does not now express himself simply as feeling better, but he is full of energy and life. His step is quick and he mounts the stairs

Effects on  
patient.

Soothed.

Sleep.

Convales-  
cent.

Restored.



rapidly, and betakes himself to his wonted occupations with new power and application.

Points of  
cases.

We have been dealing with the method of preventing the germs of typhoid from running their natural course, and maturing, in the production of the fever which they propagate. Individual cases that have been successfully treated could be mentioned, but it is scarcely necessary, as they partake of the same characters. The salient points of all were: (1) The unmistakable premonitory symptoms of the advent of a fever, which there was every reason to suspect was typhoid. It is scarcely necessary to recapitulate these symptoms. (2) In each case the Pyonex was applied before the patient took to bed. (3) The resulting discharge of purulent matter was of such a nature, and the quantity so profuse, as to leave no doubt that the system was highly charged with toxic germs of a virulent character. (4) The effect of the expulsion from the system of the large mass of poisonous pus and typho-toxin, was the rapid restoration to good health and spirits, the time not exceeding four or five days.

#### THE EXANTHEMATA.

Similar  
results in  
the exan-  
themata.

Similar results are obtained when patients are sickening for similar classes of fevers, which are caused by blood poisons resulting from bacilli or other disease germs. Exanthematous diseases such as typhus, scarlatina, variola, measles, &c., are nipped in the bud when similarly dealt with. The expulsive powers of Nature are exercised equally against any and every kind of morbid product, which may become the forerunner of a dangerous type of fever.

The following cases of the prevention of small-pox and morphia poisoning are given in detail because they are of a unique character and serve to exemplify in a remarkable manner the present hypothesis :—

Two cases.

#### SMALL-POX PREVENTED.

A gentleman while travelling by coach in Mexico, passed the night in a town where small-pox was prevalent. Without knowing it, he slept in a house where there had been some fatal cases. He pursued his journey on the following day. On the fourth day after he began to feel ill. He was attacked by severe pains in the lumbar region, and in all his limbs. He had vertigo and loss of appetite. He said that all his pains were similar to those which he felt when he was vaccinated, but now they were intensified. He was sure he had taken the affection of small-pox and was sickening for it.

Variola.  
History.

The Pyonex was at once applied over the whole of the back, chest, and abdomen. He was so ill that he was confined to his bed for two days in a high fever. An immense quantity of *dark* and thick purulent matter was driven out of the system, and forthwith his pains and other symptoms disappeared. On the fourth day after being treated he was able to dress and continue his journey. He was satisfied that he would have been laid up with small-pox but for the Pyonex Treatment.

Treatment.

Although the average period of incubation of small-pox is fourteen days, it may vary to any period between four days and twenty. The length of the period of incubation depends on the amount of the virus which has been taken into the system, its more

Incubation.

or less poisonous nature, and the temperature of the atmosphere surrounding the patient, being such as to favour or retard its process of changes in the blood.

Pathology. In the present case the poison was doubtless of a most virulent nature and the quantity taken into the system large. There was every probability that the attack of small-pox, which would have been induced but for the timely application of the Pyonex, would have been of the most fatal description.

The second case is one of the

#### PREVENTION OF THE FATAL EFFECTS OF MORPHIA POISONING.

History. A Frenchman, aged 46, had been accustomed to take 16-grain doses of quinine for intermittent fever. He went to a druggist's shop in the evening and procured a phial which was supposed to contain sulphate of quinine. On arriving at his house he filled eight 2-grain capsules and took them. In a short time he felt exceedingly ill; and his wife being alarmed, sent for a doctor; he grew rapidly worse, and two other physicians were quickly called.

The first doctor who was called, on examining the phial, discovered the upper part of it contained sulphate of morphia and the lower part quinine.

Electricity. Electricity was applied to the head, heart and spine. But he began to wander and became comatose, after which he could not be made to answer any question. The application of electricity was persevered in for two hours, but he steadily grew worse. He was walked up and down, until his legs gave way, and he had to be dragged along. Hard slaps were given to the back and chest. His face became

deathly pale, his eyes turned up, showing only the white, he was unconscious and dying.

At this moment, when all hope was gone, it was Treatment. proposed, as a last resource, to apply the Pyonex. This was immediately done. The application was made with more than usual force, over the whole of the back, chest and abdomen. The effect was most satisfactory. In about twenty minutes he opened his eyes and consciousness returned, and shortly after he was able to get up and sit in a chair. In an hour afterwards he was smoking a cigarette, as if nothing had happened. No further symptoms of the poisoning returned.

It may here be asked how the Pyonex Pathology. Treatment could act as an antidote and prevent the poison from taking effect. As in other cases, where its action has been more or less immediate, allowing no time for the expulsion of an offending element from the system, so in this case its great counter-irritant effect contributed to save the man's life, by diverting from the brain the soporific effects of the morphia.

Doubts may arise in the minds of those who are Typhoid. unacquainted with the Pyonex Treatment as to the alleged prevention of typhoid, whether the disease Query. in its period of incubation was really typhoid, and the same thoughts might crop up as to the alleged prevention of variola. These are natural, and a little further explanation is necessary.

Beyond the presence of such symptoms as lead Answer. us to the conclusion that our patient is most probably in the incubation stage of typhoid, we have evidence of another kind that never deceives us, that is, the

kind of discharge which is consequent on the application of the Pyonex.

The  
discharge,  
innocent  
and  
virulent.

The quantity and character of the discharge are an unerring indication of the state of the patient. In the case of innocent affections the expelled matter is innocent in appearance, *i.e.*, light in colour, thin and semi-transparent, and in such cases the symptoms of the patient are never such as to excite our alarm. The colour, consistency and virulent appearance of the discharge *vary in exact proportion to the gravity of the affection*, commencing with a thin and almost serous appearance, in cases of simple indisposition, to the thick, dark-coloured, or black, and copious pus, which is expelled in cases of the gravest class where life is seriously threatened. We cannot get a thin, pale discharge from a system which is in the incubation stage of a virulent fever; nor can we get a thin, dark pus from the body of a patient who is suffering from a transient and comparatively innocent complaint. Whatever may have been our surmises or fears respecting a possibly grave prognosis, they are dispelled and sent to the winds, if the discharge resulting from an application is of an innocent description. But the dark grumous pus as met with in severe cases is simply horrible to contemplate, and we as instinctively recoil from it as we do from a snake. We wonder, in fact, that life could be maintained at all while such foul and deadly virus was contained in the system.

Incubation  
discharge.

When a Pyonex application is administered in the incubation stage of typhoid, the resulting discharge is very copious, thick, or grumous, and of a colour somewhere between a dark green and blue; when it



appears we are not left in any doubt as to the serious consequences which threatened the patient, and in addition to this, the immediate improvement in the condition and symptoms after the pus is expelled, furnish conclusive evidence as to the removal of the exciting cause of the suspected disease.

Doubts  
removed.

The case of the prevention of the morphia poisoning raises an interesting query as to how far the Pyonex Treatment, being extensively applied over the body, would act as an antidote in cases of poisoning, when induced by other drugs, which cause death by a soporific effect on the brain. It would be most interesting to make a trial should opportunity offer. The inference that is naturally drawn from the case cited is, that it is possible to produce a counter-irritation sufficiently violent to divert from the brain to the surface of the body the effects of an active narcotic, even when it is within an ace of causing death. Another fact presents itself somewhat prominently, which is, that when the revulsion is accomplished the power of the narcotic is rapidly dissipated.

Morphia  
poisoning.

Antidote.

Counter-  
irritation.

Therefore, whether our patient be sickening for typhus, scarlatina, measles, small-pox, intermittent fever, or any other affection that may be produced by a blood poison, our course of action is always the same. We create some thousands of artificial pores on the back and chest, and complete the treatment by the application of the oil and cotton-wool, and in about forty-eight hours we are rewarded by witnessing the expulsion of the exciting cause in the form of pustules on the entire surface covered by the application. All the symptoms of the threatened

Exanthema.

One course  
for all.



disease quickly disappear, and the usual health returns.

Momentous  
question.

The momentous question that presents itself to us is: Will Nature's forces be exerted to a sufficient degree to expel from the system the toxins or exciting cause of any or all of these exanthemata, &c., if we take adequate steps to assist the natural effort? Experience proves that the answer is decidedly in the

Answer.

affirmative. If the Pyonex Treatment be resorted to at any time during the incubation stage, the specific fever is totally prevented, and if the application be delayed until the fever has actually commenced, it is rapidly cut short and resolution is established. In this latter case the operation might be more accurately stated as treatment of an actual disease, but yet the suddenness by which it is cut short prevents its running its usual course.

If treatment is  
delayed.

It is difficult to over-estimate the importance of the consideration of the powers of the Pyonex Treatment as a means of the saving of life, when we speak of bronchitis, pneumonia, dysentery and cholera, measles and whooping cough.

350,000.

According to the returns of the Registrar-General these affections are shown to be of such a serious type that they are responsible for over 350,000 deaths annually, and there is every reason for believing that an application of the Pyonex at the inception of any of these cases would have the effect of unloading the system at once of the exciting causes, and thereby cut short the course of the affection and restore the patient to his normal condition within five or six days.

During the author's long experience he has never

known such a result to fail when this treatment has been applied as soon as the first symptoms of the given disease has appeared, and considering the fact that the application of the treatment even in advanced stages of the said disease very rarely fails to bring about resolution; it is more than reasonable to conclude that a favourable result should follow when the disease is only commencing.

#### AN ADJUNCT IN DIAGNOSIS.

In certain cases the purulent discharge, which is produced by the application, is much more profuse, and of a different character to what might be expected, considering the nature of the disease under treatment, and at the same time the constitutional excitement resulting from the application is much greater than it should be. Unexpected discharge.

In these cases, the previous history of the patient being enquired into, it will always be found that at some previous period the patient suffered from intermittent fever, measles, typhoid, influenza, or some kindred disease, and from that date the general health has never been so robust. The disproportionate quantity of the discharge is a portion of the morbid element which constituted the exciting cause of the said previous disease, and which had been lurking in the system for, it may have been, a number of years. The symptomatic effects which follow the application of the Pyonex will thus often serve as a guide whereby to determine that the patient previously suffered from some specific disease. Previous history. Exciting cause. If, Example. for instance, an application be made to a patient who simply states that he suffers from general in-

disposition, and during the two following days, whilst the morbid elements are passing from the deeper tissues to the surface, he complains of severe headache and shivering, we shall probably discover by interrogation that he had previously suffered from influenza or intermittent fever. One patient will say that he has had a distinct taste of measles in his mouth while under the treatment, which attacked him several years ago; another, that most of the symptoms of an attack of influenza, which he had ten years formerly, were repeated.

Previous  
affections.

Measles.

Influenza.

Symptoms  
repeated.

In fact, whenever a portion of any kind of morbid element, which at some previous period constituted the exciting cause of a specific ailment, is in process of being expelled from the system by the application of the Pyonex, the same symptoms which actually accompanied the ailment may be repeated.

Case.

A case may be cited by way of example :—

The treatment was applied to a patient who complained only of rheumatism of the elbow. The resulting discharge was very copious and of a deep yellow, and totally unlike the comparatively scanty, light-coloured pus, characteristic of simple rheumatism. The constitutional effects during the second and third day after the application were such as are never seen during the treatment of rheumatism.

#### AS A MEANS OF DIAGNOSIS.

There was severe dizziness, cephalalgia, languor and diplopia, accompanied by prostration of the nervous and muscular systems. Such results were not to be expected from the expulsion of the rheumatic virus, especially as in the present instance the

application of the Pyonex was confined to the arm and shoulder, including only a few inches of the back and chest. On interrogating the patient it was elicited that several years previously there had been a severe attack of influenza accompanied by bronchitis, since which the health had never been robust. Cough and other chest troubles were easily contracted on small exposure to cold, and great care was necessary to steer clear of them.

Previous history.

It is an interesting fact and may be taken as an invariable rule attending the application of the Pyonex, that in cases where the treatment is administered with a view to relieve a specific acute affection, its beneficial effects will not be limited to this, but whatever germs of disease may be lodging in the blood or tissues, whether they be of one disease or more than one, the system will avail itself of the new outlet, and the requisite number of applications being made, expel them all.

All blood poisons expelled.

The physician who is experienced in the application of the Pyonex, directs his efforts in the first place to ascertain whether the ailment of his patient is produced by a blood poison. If he be convinced that such is the case, his next consideration is, as to whether this can be expelled from the system by the application of the Pyonex. In the same manner as the pain and swelling which are caused by a deeply embedded splinter are relieved by the extraction of the splinter, or similar symptoms which are caused by necrosis are relieved by the removal of the diseased bone, so in the case of the patient who has suffered serious deterioration of health owing to previous attacks of fever, scarlatina, typhoid, or kindred dis-

Diagnosis.

Treatment.

Prognosis.

Erroneous  
conclusion.

eases, a satisfactory restoration may be looked for with confidence when the disease germs which were left in the system are expelled. The erroneous conclusion of those who have had the misfortune to suffer for years from the remains of such blood poisons in their system, is that some permanent damage has been done which admits of no remedy, and that they must suffer to the end of their days. But a few applications of the Pyonex suffice to reveal the true cause of their ailments, thrust it out of their body, and bring them permanent relief.

It frequently occurs that the Pyonex serves to indicate the exact locality or the centre of an affection or pain, *e.g.* :—

Case.

Locomotor  
ataxia.

A patient had been under treatment for several months for locomotor ataxia, with excellent results. Various applications had been made to almost every part excepting the thighs, there not appearing to be any indication of these requiring to be treated. But it was decided to apply a test treatment to the right thigh and watch the result. The abundance of discharge was surprising, not only was the whole of the integument closely covered with pustules, but the expulsion went on without interruption for over a fortnight. On the second day after the application, the patient testified that the whole leg felt lighter, he was able to lift it more nimbly and walk better. The other thigh was then treated, with a similar result. This led to the diagnosis that the purulent infiltration which was credited with being in a great measure confined to the spinal medulla and the surrounding parts, extended to the thighs and considerably inter-



ferred with the natural power to control the movements of the lower extremities.

In another case of complete impotence of years' duration which was one of various sequelæ to several severe attacks of influenza, a test application was made in the hypogastric region, there being indications that it was a suitable spot to commence with. The result left no doubts as to the suspected cause. The pus poured out in quantities, and during the continuation of the treatment this was the point where the freest expulsion always took place. The sexual powers were restored to their normal condition.

Case.

Impotence.

Another instance, which is one of many, of similar occurrence. A lady, not an invalid, complained that she had no enjoyment of real health. There was a lack of interest in everything, and a weariness that succeeded exercise of any kind. For years she was thus affected, and though possessed of ample means, could find no relief. She wanted to know if the Pyonex Treatment might suit her case. She was about 28, and every part was sound. I suggested a test application of five punctures on the chest by way of discovering if there were purulent infiltration in the system. This was done, and a glance at the discharge left no doubt as to the nature of the case—a good show of pus and somewhat inflamed skin. Two or three applications were subsequently made on the back and chest separately. A quantity of pus was discharged. Her face filled out and became rosy, her personal appearance greatly improved. All the *ennui* vanished and she now visited the West End to do her shopping, with enthusiasm.

Case.

Indisposition.

In all doubtful cases, a small test application such



- Test application. as the above is a valuable help in diagnosing the real state of the system, and in deciding on the most desirable course of treatment to be adopted.
- Moribund. The treatment also serves to diagnose when a case is near dissolution, when there are no constitutional symptoms which lead to its being suspected.
- Reddening of the cutis. It will be observed that the small portion of the integument in which the artificial pores are made by the instrument, quickly assumes a roseate hue, which considerably deepens in shade after the application of the oil. This reddening of the cuticle is always more intense in those cases in which the vital powers are in the most active state. Between the ages of 15 and 25 years this reddening is most perceptible, while in the case of persons who are advanced in life, and in others whose strength and vitality have been greatly reduced by long sickness and other causes, it is comparatively slight. But if the patient is within a few hours of death, not the smallest reaction or blush can be made to appear on the skin, either by the application of the instrument or the oil. It is contended by those who are most familiar with the use of the instrument that this rule has no exception. A case in point came under the writer's notice :—
- Absent.
- No exception.
- Case. A patient, aged 61, who had suffered from a variety of ailments, and had received benefit from the first application of the Pyonex, after an interval of some weeks was desirous to have a second application. He was comfortably seated whilst being treated and chatting in a pleasant manner. I noticed the total absence of the customary redness of the integument at the points touched by the instrument. I then increased the force of the blow and thereby made the

perforations deeper, but with the same result ; the skin, although punctured, remained perfectly white. I examined the pulse and found that the heart's action was normal. I began to draw the conclusion in my own mind that this rule, which was stated to have no exception, was at fault in the present instance, as the patient's manner and condition, as far as could be ascertained, were in all respects the same as usual. The final issue, however, proved that the rule held good, and that the miscalculation was on my side. Within twenty-four hours the patient died of asthenia, the total failure of the vital forces.

## CHAPTER VII.

### COUNTER-IRRITATION.

Therapeutic  
results.

VERY interesting therapeutic results are obtained by the application of the Pyonex, which may be said to be due to counter-irritation. The degrees of a counter-irritant effect which may be produced by the instrument, differentiate widely from those which may be made by any other means which are at our command.

General  
appliances.

Stimulating, or vesicating liniments, mustard poultices and blisters, are the main appliances that are called into use for the production of counter-irritation, and we justly hold them in the highest esteem because of their excellent therapeutic effects. The milder of the three is usually the liniment, while the mustard plaster is the most violent and the quickest in action. The blister, which occupies a longer time to produce its effects, although during its operation, it is not accompanied by such painful sensations as the mustard application, is decidedly the most powerful of the three.

Comparison.

The counter-irritant effects produced by the Pyonex in an ordinary application may be said to vary in several particulars, from either of the three mentioned agents; while the effects which it is possible to produce by an application which is made,

having this end only in view, may differ in a far greater degree.

It will be interesting to take into consideration the main differences that appear to exist in the various appliances, and to carefully compare the results that may be obtained from their use. The first point that naturally calls our attention is the amount of surface that is usually included in the part to which the counter-irritant is applied.

The poultice, blister and liniment are usually confined to a circumscribed spot, and the reasons for the limitation are such as to preclude the advisability of the prescribed boundary being disregarded. But in the use of the Pyonex we are practically unlimited in the extent of space or surface of the integument on which we may desire to operate.

If we take, for example, a case of inflamed hæmorrhoids, in which our object is to reduce the inflammation, and at the same time, the size of the tumid piles, any counter-irritant effect that might be produced by the application of a blister or liniment to the lumbar region would scarcely recommend itself to our judgment as being likely to meet the case. But if we make an application of the Pyonex to the whole of the back, the revulsive effect is so great, that the excess of blood is drawn away from the inflamed parts; the hæmorrhoids are thereby starved, and rapidly diminish in volume. Another instance is met with, when an application is made in a case of pneumonia, or acute bronchitis. The whole of the chest, abdomen and back may be treated, if the symptoms are sufficiently severe to demand it. The result is, that the depletion which takes place in the lung

Space  
operated  
on.

Inflamed  
hæmor-  
rhoids.

Depletion.

Pneumonia.

Bronchitis.

Depletion.

parenchyma and its pleural sac is so great, that within an hour there is a decided amelioration in all the symptoms. In both of these affections we are accustomed to employ mustard applications to the chest, which though causing great discomfort to the patient, are often sufficiently effective to turn the tide at a critical moment, and save life. But the revulsive and depletive effects are much less, when these are applied, than are those which are produced by the Pyonex, while the latter, in a short time communicates a soothing effect, without imparting the smallest element of discomfort. The same results are obtained if an application of the Pyonex be made on the chest during a severe paroxysm of asthma, which under ordinary circumstances may last twenty-four or more hours. In as nearly as possible forty minutes, the effect of the counter-irritation relaxes the spasm of the muscular coat of the bronchial tubes, and the patient begins to breathe freely. In each of these three affections, the counter-irritation of a judicious Pyonex application on the chest goes on, until the system has had time to expel a considerable portion of the purulent matter, which infiltrated the lung tissues, and formed the exciting cause of the disease. Experience shows that the beneficial effects of the sudden revulsion which is caused by a Pyonex application, in acute pulmonary affections, are an extraordinary help, and often save life, when all other means fail.

The degree of the counter-irritant effect that it may be desired to produce is also an interesting point. While making use of the Pyonex, we are not compelled, as in the case of the mustard-leaf, to re-

Soothing  
effect.

Asthma.

Relaxation  
of spasm.Continuous  
effect.Degrees of  
effect.

move it after a short time, because it can no longer be tolerated by the patient. But although we use the instrument in such a manner that we produce an extremely active counter-irritant effect, yet we can allow the application to remain for any desired length of time, without hearing a word of complaint from the patient.

We are able to regulate the counter-irritant effect by the number of perforations which we make on a given spot. If we double the usual number of perforations we double the counter-irritation. But we have the option of giving three or four times the number of perforations on a given surface, until they are so close as to adjoin each other, or even to overlap. Or we may even go beyond this, and cover the same surface two or three times with the artificial pores. This latter plan must be had resort to in cases of chronic rheumatism, or rheumatoid arthritis, more especially in the treatment of the swollen tarsal bones, which refuse to yield to an ordinary application.

Regulation  
of the  
effect.

Perfora-  
tions  
multiplied.

Rheumatic  
affections.

It is rarely necessary in chest affections to have to multiply the number of perforations to a large extent, but there are cases where the symptoms are exceedingly grave, when the patient is first seen; and at such times the gravity of the case must serve as a guide for the degree of activity of the application.

Pulmonary  
affections.

There are still some further points of interest to be noted, in connection with the subject of counter-irritation, which have regard to its relations to the important desideratum of subduing pain.

As an  
analgesic.

We appear to have no means at our command which can be compared in effectiveness to the appli-



Extensive  
rheumatic  
pain.

The  
Pyonex,  
our help.

cation of the Pyonex. In saying this, it may be scarcely necessary to mention that no allusion is meant to the several narcotics and anodyne remedies which we are constantly employing, and whose analgesic qualities are well understood. Anodyne liniments as well as the blister, and mustard poultice, have their offices, and long experience has taught us their value under certain circumstances. But when it is requisite, for instance, to allay a rheumatic pain, which has invaded several joints at the same time, the blister and mustard are inadmissible, while the liniment is not sufficiently active to answer our purpose.

In such cases the Pyonex comes to our help. Experience shows that we need not hesitate to apply it, though it be needed in several parts at the same time. It is well tolerated by the patient, inasmuch as, while we are travelling from one joint to another, creating artificial pores, and anointing them with the oil, the severe pains which did not admit of motion in the articular surfaces are being rapidly relieved, and on this discovery being made by the sufferer, he is able to make use of the limbs which have been so long retained in the same position. Allusion may here be made to cases, which serve as illustrations:—

#### CASES.

Analgesic  
effects.

Rheumatic  
pains  
relieved.

A young man, aged 26, was laid up by an attack of rheumatism, and had not left his bed for eighteen months; all the joints were more or less invaded, and he was unable to move his limbs. The Pyonex was applied wherever there was pain, and also on the back and chest. As the counter-irritant effect was established in the various parts, so the pain dis-

appeared. He lost no time in dressing, and walking out in the sunshine. He went miles, and suffered no more from the rheumatism. Ten days after the application he returned to his occupation as bricklayer. In another case, the patient was aged 75, and had kept his bed for four weeks, owing to an attack of acute rheumatism. His strength was rapidly failing, and it was feared that he would soon succumb. He was in a constant acid perspiration, had a weak pulse and no appetite. The Pyonex was applied from the shoulders downwards, and owing to the counter-irritation, the pain in the nucha, spine and joints all disappeared. He got out of bed and walked about the room, and immediately afterwards went downstairs and sat in his parlour. The acid sweat ceased, and strength returned, and in a few days, he was walking about his farm. Another case was one of sciatica, and the patient an engine-driver; he was very lame, having to use walking-sticks, and was afraid of losing his occupation. A single application of the Pyonex sufficed to free him of all pain within thirty minutes. He walked away without a sign of lameness, or having recourse to the support of the walking-sticks, and had no further return of the affection. In another case, severe neuralgia over the temporal bone, which resisted every remedy, was quickly relieved by an application of the Pyonex. Several other cases of chronic and acute pains in different parts, have rapidly yielded owing to the counter-irritation set up by an application of the Pyonex.

Rheumatic  
pains  
relieved.

Sciatica  
relieved.

Neuralgia  
relieved.

In another case, where the affection complained of was unaccompanied by any sensation of pain, Hiccough.

a young lady had suffered for three days and nights from a violent hiccough. The prescribed remedies failing to produce any amelioration in the symptoms, the Pyonex was applied over the whole of the abdomen. A sharp counter-irritant effect being rapidly produced, the spasmodic action of the diaphragm ceased in a few minutes and permanent relief was maintained. Whether the spasms in this case were due to a reflex action, which was caused by some abnormal stimulus to a sensory nerve, and which was then conveyed to the diaphragm through a motor nerve, could not be ascertained. But it served as an additional instance of the valuable results which may be obtained by counter-irritation, when applied only over a moderate surface, by means of the Pyonex.

Morphia  
poisoning.

The case which follows has more extraordinary features than any of the foregoing, and relates to the effect of extensive counter-irritation, where by accident a large dose of morphia had been taken.

Symptoms.

Full details are given elsewhere. The patient in this instance was rapidly sinking and in fact dying, from the effects of the quantity of morphia that was swallowed. The eyes had turned up and he was unconscious, and the efforts of three medical men to restore him by electricity and other means were unavailing.

Counter-  
irritation.

The body was covered by a rapid and vigorous application of the Pyonex, the perforations being made deeper than usual. The effect of this was to establish an active counter-irritation over the whole of the chest, abdomen and back. By the action of this strong revulsion to the surface of the body, a corresponding depletory effect took place in the brain.

After an interval of twenty minutes, he opened his eyes and consciousness returned. He ceased from this time to feel any further effects of the morphia.

Brain  
depletion.

From this we may draw some interesting inferences, among which, one is, that if the soporific effect of a poison can be diverted from the brain for a comparatively short time, its effect may altogether pass off and leave the subject unharmed. Another inference is, that by the employment of such a violent counter-irritation as it is possible to set up, by means of a vigorous application of the Pyonex, it is possible to divert from the brain, the narcotic effects of a poisonous dose of morphia, and probably of any other drug, possessing similar properties. From this point we are led to another consideration, which is, that the system acts in the same manner in the case of an adventitious element being present in the circulation, whether it be a narcotic toxicant, or the exciting cause, of a fatal exanthematous fever. That is to say: When a sharp counter-irritant effect, on the surface of the body, is availed of to the greatest possible extent, the natural inherent tendency of the system is to drive to the surface, whatever foreign or noxious element may be lodging within. It does not distinguish between one or the other kind; all are treated alike.

Inferences.

Diversion.

Expulsive  
tendency of  
the system.

It would appear that in this way only, can be accounted for the fact, that in so many of the cases mentioned, such a rapid and beneficial effect was produced by the Pyonex Treatment, notwithstanding the diversity of the ailment.

## CHAPTER VIII.

### EMPIRICISM.

IN one respect the Pyonex Treatment appears to differ from our usual and accepted methods of dealing with diseases; that is, the nearness with which it approaches to the absence of empiricism.

In a most interesting address, which was delivered at the Annual Meeting of the British Medical Association, at Manchester, by Sir Thomas Barlow, and published in the *Lancet* bearing the date August 2, 1902, there are the following remarks on the subject of Empiricism: "But at all events—and let us frankly admit it—the basis of our practice is empiricism, and the basis of all our practical life is empiricism. But there is good empiricism and bad. The good empiricism continually strives to follow nature's lead, and shed that which is foolish and useless, while preserving that which is essential. And good empiricism, by carefully recording cases, noting the results of changes made, first by chance and then by design; may at length assimilate to a truly inductive process, even though there are many unknown quantities. . . . And as a warning against becoming self-centred and self-opinionated, let us never forget Bacon's wise aphorism: 'For as they were men of the best composition in the State of Rome which either, being Consuls, inclined

Sir Thomas  
Barlow.

Basis of  
our prac-  
tice.



to the people, or being Tribunes inclined to the Senate ; so in the matter we now handle, they be the best physicians which, being learned, incline to the traditions of experience, or being empirics incline to the methods of learning.' "

The best physicians.

With regard to the foregoing remarks, if the basis of our practice be held to consist principally in the administration of the various therapeutic agents which we are accustomed to employ, for the subjugation of the manifold symptoms of disease, we appear to have no choice, but to allow of the veracity of such statement. Inasmuch as we prescribe this or that remedial measure, because of the carefully recorded archives of cause and effect, which have been handed down to us as the legacies of those who occupied the field before us, we to a large extent follow in their steps, without waiting to make a minute examination of the exact method by which the several therapeutic results which take place in the system, are accomplished.

And when we take into consideration the bare facts, and the exigencies of every case which confronts us, there appears to be no other way left open to us. The prescribed remedy, as soon as taken by the patient, is lost sight of. We cannot see by what means or minute changes, it brings about the improving symptoms, for which we are on the watch. We administer a medicine because of what we have heard and been told, and we trust, that effects and results may follow our actions, which may be similar to those which attended our informers. The present attainments of medical science, here draws the curtain. The limit, so far and no further, is reached. We may,

Actions of remedies, untraceable



however, be encouraged, while contemplating the victories which have already been achieved by medical research, to entertain the hope that at a future day some light may yet be thrown upon this interesting subject.

Nature's  
lead.

"But good empiricism strives to follow nature's lead." A great deal might be written on this short sentence, which recommends itself to our judgment as the soundest common-sense. How many empty theories and misleading arguments would be laid aside, to the material advantage of the young practitioner, if nature's lead were taken as the foundation on which to raise his super-structure. This subject is an absorbing one, but as our present object is to deal with the special line of treatment under consideration, we must pass on, and endeavour to discover what connections herein, may be referable to the Pyonex.

The  
Pyonex,  
each stage  
visible.

One great essential, in which this treatment differentiates from the ordinary administration of therapeutic agents, especially in those cases in which the most beneficial results are attained, is that the practitioner sees from day to day, what is taking place. When the affection to be combated, is caused by purulent infiltration, and an application of the instrument is made, with a view to remove this exciting cause, the progress of each step towards the attainment of this object, may be watched, and examined, with deliberation. From the first glow, which is produced at the time of the application, to the papular, vesicular, and finally mature pustular stage, all is seen; the ocular evidence is unmistakeable; and while the exciting cause is thus being

Stages.

removed by nature's expulsive forces, the physician also watches the waning symptoms and disappearance of the disease.

Not only is the attention of the physician arrested, but he becomes deeply interested in minutely noting the readiness with which his efforts to follow nature's lead are appreciated and taken advantage of by the inherent powers of the system. He is not kept in the dark, nor has he to wait for days in some degree of uncertainty, as to the initiation of certain alterative effects which may lead to the realisation of his efforts ; but in the vast majority of cases he is able to satisfy himself quickly, with regard to the correctness of his preconceived diagnosis and prognosis. An endeavour has been made, in the remarks on pathology, to show that the Pyonex Treatment is one which wholly follows Nature's lead. This lead appears in a pre-eminent degree, to tend to the great result of getting rid of all kinds of impurities that are either formed in, or find their way into, the human system.

Nature's  
lead availed  
of.

The ten-  
dency of  
the lead.

In our everyday life, while we are unafflicted by ailment of any kind, we trace the great and constant effort which is made by the cutaneous glands to keep the blood pure. We are familiar with the beneficial effects which are produced in the case of various ailments, when by following Nature's lead, we take such measures as will effect a manifold increase in the daily function of these glands. The Turkish and vapour bath may be truly said to be a strict following of Nature's lead. In cases of gout we see Nature's lead in its accomplishing the expulsion from the body of the crystals of uric acid through the kidneys. We witness the same kind of action in rheumatic affections, when

Cutaneous  
glands.

Measures  
for increas-  
ing their  
function.

In gout.

In rheu-  
matism.

Nature's  
lead in  
variola.

In skin  
diseases.

In fevers.

the formic and other acids which are expelled, charge the atmosphere of the patient's apartment. In variola we see in the characteristic eruption, the efforts which are naturally made to expel a virus, which, if it remained in the system, would terminate the life of the patient. We again trace Nature's lead in all kinds of skin diseases; the eruption, of whatever kind it may be, constituting the impurity or exciting cause of the affection, which the unaided system is endeavouring to thrust out of the body. We see the same action manifested in all kinds of exanthematous fevers. The high temperature, rapid pulse and characteristic rash are but the symptoms which are produced by the septic element which has entered the system. A part of this is being got rid of by a process of combustion through the lungs, and another part is driven to the surface and forms the rash. The foregoing enumeration does not exhaust the list of all the ways which are availed of to keep the tissues in a state of purity, and which may equally be denominated as being Nature's lead. But those to which reference is made, may be considered as sufficient for our present object.

Typhoid  
prevented  
by violent  
skin action.

Referring to the foregoing remarks respecting the action of the cutaneous glands, an interesting case in point is recalled by the memory, which happened in the United States, and which serves to show how disease germs may be driven out of the system by violent skin action.

The resident physician of a fever hospital stated that on various occasions he was conscious that he had actually contracted the disease of typhoid fever, which he regarded as only a natural consequence of his visiting daily such a number of typhoid patients. He

had all the symptoms which are usual to patients before being compelled to take to bed. When he was attacked in this way he felt unequal to the fulfilment of his daily routine of visits. His plan was to order Plan. his horse to be saddled, and gallop for hours in a hot sun as fast as his horse could carry him. He frequently stopped at the roadside inns and took copious draughts of whisky and water. He soon got Diaphoresis. into a profuse perspiration, and kept it up as many hours as possible. On reaching home he took a warm bath, and put on fresh linen; after passing a sound night's rest, when he awoke on the following morning the premonitory fever symptoms had vanished.

In this case, the united efforts of the ordinary skin action, and the eliminative action of the kidneys and intestines, were unequal to the task of thrusting out the exciting cause; but owing to the aid imparted to the excretory power of the system by the continuous and exalted action of the cutaneous glands, the natural forces were so stimulated that they were enabled, not only to lay hold of and separate the toxic elements from the tissues and blood, which had already become infiltrated by it, but also to convey it through the minute gland tubes to the porous openings in the cuticle, and so complete its total expulsion from the system. Effects of increasing the skin action.

The proofs, which are so frequent and repeated in the experience of every physician, of the innate tendency of the system to make use of all the excretory organs and channels which are at its command, for the purpose of expelling such noxious and foetid elements as may engender disease, are so overwhelming that probably not a dissentient voice to the The innate tendency of the system.

More  
effective  
methods.

facts could be found. Furthermore, it would not be quite admissible to allow empiricism a place in such beneficial results, which are accomplished by the free hand of the natural forces. We may look on and admire, for we become eye witnesses to cause and effect. And therefore since the happenings of our daily life satisfy us, that by such simple methods the natural efforts of the system may be so helped that such excellent and important results may be thereby attained, we appear to have no choice but to come to the conclusion that by employing more effective methods as helps, we may obtain proportionately higher results.

Greater  
results.

The artificial pores which are made by a Pyonex application, and the tonic effect which is produced by the absorption of the oil, may, without fear of contradiction, be classed among the more effective methods as helps; and without passing the bounds of modesty, it may also be said that the results thereby produced, are proportionately higher. We have not at our command another method so gentle, so far-reaching, and that affords the full time which is required by the natural expulsive forces, to produce a complete result.

Importance  
of allow-  
ing time.

The ordinary time of two or three days which is occupied by an application in order to attain maturity and produce a ripe pustule is a most important item in the treatment. If only twenty hours were allowed, only a thin serum would be expelled. If thirty hours were allowed, a cloudy and rather thicker serum would

Twenty  
hours.

Forty-eight  
hours.

result, but by allowing the full forty-eight, the serum is converted into actual pus, and thereby the affected parts are relieved of this virus, which experience shows



to be the exciting cause of the affection with which we are dealing.

The immediate object of an application of the Pyonex is simply to provide an exit and contribute a stimulus, whereby the system may the more easily carry out its natural operations, in a more effective manner; and moreover, when we consider that these operations are carried on under our daily inspection, we may truly be said, in the former case, to be strictly following Nature's lead; while in the latter we may congratulate ourselves, inasmuch as we have at our command, a method of successfully combating some of the most intractable cases which are found in the vocabulary of diseases; and which at the same time we may regard as being free from the appellation of empiricism.

Nature's  
lead fol-  
lowed  
without  
empiricism.



## CHAPTER IX.

INCEPTION OF DISEASE.

DIATHESIS OF DISEASE.

POISONING.

RELIEF OF PAIN BY THE PYONEX.

TRAVEL OF PUS.

PYONEX OIL.

### INCEPTION OF DISEASE.

Initial  
cause.

OF the manifold steps or stages in the production of disease, the initial cause, for instance, may be a severe cold, or a sudden shock to the nerves, or some offending ingredient taken with food. In either of these cases, some particle of delicate tissue may become corroded or disintegrated, and during its process of disorganisation a micrococcus may be found. If the micrococcus is of a pyogenic nature, its resulting pus may produce disease. If, however,

Micro-  
coccus.

Pus.

Toxin.

it be an acid-forming micrococcus, it may be perchance formic acid, which attacks the joints, and soon produces the symptoms of rheumatoid arthritis, while other varieties produce their specific ailments. Another line of action is when pus decays, and bacilli are formed in it. The bacilli then produce toxin, and the toxin causes the disease. In both of these cases, whether that of the pathogenic formic acid, or the bacillus toxin, the rule is almost invari-

Bacilli.

Toxin.

able, that pus is freely formed, as a result of the Pus. disorganising process which is set up by the bacterial toxin. So we have the toxin and pus working together in the development of the more prominent symptoms of the given disease. The toxin appears to be our special enemy. If of a virulent nature, it may rapidly produce fatal results, but on the other hand, it may be comparatively innocent.

If we place these causes in their order, we shall have :—

1. { (1) Cold or shock. (2) Micrococci. (3) Pus or acid. (4) Disease.	2. { (1) Decayed cell pus. (2) Bacilli. (3) Toxin. (4) Disease.	Causes.
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### THE GENERAL DIATHESIS OF DISEASE.

It is held as an established fact by members of our profession that although under medical treatment we are successful in overcoming and alleviating the symptoms of a large number of ailments of a chronic nature, we are not able in the vast majority of cases to remove the specific diathesis, or the innate tendency of the patient to a return of the affection.

We are accustomed to have under our notice an immense number of cases in which the symptoms of certain ailments are reproduced with every succeeding spring or winter, and the condition of the tissues of the subject is such that we take it for granted that such returns will go on as long as life lasts.

Now as we look carefully into the effects which are produced by a judicious use of the Pyonex Treatment, we are not a little pleased at the dis- Periodical affections.

covery that we are no longer compelled to employ such measures as prove ineffective, to restore perfect health to the patient.

We must frankly admit that there is a specific reason for the periodical return of every kind of morbid symptom, and having satisfied ourselves that such morbid symptoms have an active, exciting cause which lies dormant the greater part of the year, and only exerts its baneful influence under some adverse change of temperature or other disturbing cause, we devote our attention to such measures as we believe may prove effectual in arriving at the end in view.

Dormant  
exciting  
causes,  
expelled.

We discover that such exciting causes, although they may have lain in the system for long periods extending over 15, 20 or 25 years or more, it is without doubt quite possible to dislodge them from their lurking places and to promote their total expulsion from the system; and after this expulsion is accomplished, we are gratified at the fact that the symptoms alluded to disturb the patient no more.

We in fact are able to arrive at the conclusion that the morbid diathesis which we were unable to overcome by such means as have been at our disposal, has been completely conquered, and that in fact there remains no predisposition to its reproduction.

In the application of the Pyonex Treatment in this class of cases, we invariably find that there is an active discharge of purulent products, and we naturally draw the conclusion that some specific variety of pus cells which have long been infiltrated in the muscular and other tissues, was responsible

for keeping the patient in such a semi-morbid condition.

We regard the fact as a source of great satisfaction, that the treatment here comes to our help and crowns our efforts to restore the patient to perfect soundness of health.

### BLOOD POISONING?

It has been a common practice with many writers to speak of cases where toxins have been introduced into the system as instances of blood poisoning. The frequent results which are obtained by the use of the Pyonex Treatment, lead us to doubt the accuracy of this statement.

Habitat of  
virus.

We are, in most cases, compelled to conclude that the habitat of a virus or a toxin which has been received into the system, is not actually in the blood, but in the tissues. Some writers are of the opinion that a condition of leucocytosis is intimately connected with the rapid formation of pus cells, but if we allow that an inordinate predominance of leucocytes is favourable to the formation of pus cells, on the other hand we are compelled to admit that a certain proportion of leucocytes is a regular constituent of healthy blood.

Leuco-  
cytosis.

If, for instance, we take the case of a patient who has suffered from the absorption of pyoid matter after an operation and has succumbed to pyæmia, and we carefully examine the lungs, liver, and spleen at the *post-mortem*, we have no difficulty in discovering numerous small abscesses and other points of pus that are dispersed throughout the greater part of the parenchyma of the said organs. Now if we trace the

Blood  
filtration.

mode of the conveyance of this pus to these resting places, we readily conclude that the pus has been carried by the circulation of the blood from the point of its production either along the arteries or veins, or both, and that as soon as the blood is forced through the close capillary system of any one of the said organs, the pus corpuscles being too large to pass through the capillaries, have been left behind. It is probable that many of the exceedingly small pockets of pus which are found in the parenchyma, may be the result of the rapid formation of new pus cells which have resulted from the cells which have been so deposited by the blood, while many of the other pockets may be rapidly increased in volume by the additions of the pus which is brought by the current of blood. But in either of these cases we are led to the conclusion that the blood itself, by becoming filtered while passing through the compact tissue of any internal organ, must perforce leave behind any kind of cell which can be adjudged as of a toxic nature, and that consequently on leaving the said tissue it will have been cleansed of all the toxins, provided that their component cells or corpuscles are of larger size than those of the blood.

Cause of  
morbid con-  
dition of  
blood.

In addition to the reasons here set forth, when blood is examined under the microscope, its morbid or unnatural condition appears to consist in a great measure in a disturbed proportion of its component parts or cells more than in any actual toxins which are discoverable.

Tissue  
impurities.

On almost every occasion of the expulsion of systemic toxins or impurities which results from the



application of the Pyonex, there is no room for doubt that these impurities were lodged in the actual tissues.

It may not be necessary to reiterate here the reasons for such conclusions, as they will be met with so frequently in the Pathological Section.

I was called to see a patient who could not leave History.

his bed, aged 29, a tanner by trade. His limbs and body had been wasting away for several months until at the present time he was extremely thin. The legs and arms were like those of one succumbing to the last stage of phthisis. His explanation as to the Etiology.

cause of his present condition, was that he had been poisoned by his body and limbs becoming every day moistened during the process of tanning hides. Although his strength had gone, and he was minus his muscles, he talked naturally, and directed all matters connected with his business. I was compelled to accept as correct the supposed cause of his deplorable state, and it occurred to me that there was a fair Prognosis. chance that under the Pyonex Treatment some of these toxic ingredients which had entered the system in tanning, might be expelled from the tissues.

The first application was made to the back and Treatment. chest, and the resulting discharge was of an unusual character. The pustules were minute and appeared (1) Dis- only at the artificial pores, all the surrounding integu- charge. ment remaining quite natural. There was no increase in the frequency of the pulse, nor was there the smallest redness in any part of the skin.

A second application was made to the thighs, (2) Dis- followed by similar results. As the discharge was so charge. small I was in doubt if there would be much benefit from the treatment. In a few days, however, the



patient began to improve. His appetite was decidedly better, and he made good meals. The wasting ceased, and the muscles began to increase in volume. He continued to improve steadily, and in a few weeks could take exercise on horseback. He had but the two applications, but he finally got well.

**Discharge.** What the nature of the small discharge was, that produced all this mischief in the system, there were no means of ascertaining, but it must have been of a very toxicant nature, as no sooner was it expelled than the course of the symptoms was cut short, and an improvement set in all round. The whole system was toned up, and the new muscular tissue which was formed was equal in tone and strength to that which it replaced.

**Muscles.**

### PAIN.

**Relief of pain.**

The application of the Pyonex with the object of relieving pain is nearly always attended by most encouraging results.

Almost all kinds of pains are quickly relieved by a suitable application, the exceptions being exceedingly rare. The usual time required to bring relief is only a few minutes, and in a great majority of cases the pain does not return, after the first application. In exceptional instances, repeated applications have to be made. The usual result of an application is the expulsion of a greater or less quantity of purulent matter from the affected part, and when a second or third application is made with a view to cleaning out all the pus from the locality, the exciting cause may be considered as entirely removed, and any predisposition to the return of the pain annihilated.

When pain is of a traumatic origin, the application

of the Pyonex is as a matter of course contraindicated, but that which results from neuralgia, gout, rheumatoid arthritis, sciatica, and kindred ailments, also incipient inflammation, being of a different nature, may be treated by the Pyonex.

In the case of gout and rheumatism, the exciting cause of the pain is within or around the affected joint, and by its presence the pain is kept up. The exciting cause.

In the case of neuralgia or sciatica, the exciting cause may be lodged either in the nerve or in the tissues immediately surrounding it

Now as we have already mentioned, in many cases, it is not known what this exact cause is. The sciences of medicine and physiology, though remarkably progressive, have not yet discovered all such secrets. Some theories have been propounded, but there is not one which is generally accepted as satisfactory. Not known.

When, for example, there is pain, swelling, and some inflammation, as in the case of rheumatism in the knee-joint, if severe cold be applied to it, the complaint may be driven from the knee to the hip-joint, or to the ankle. The interesting question that comes up is, What was it that passed from the affected joint to the sound one? No sooner did it leave the knee than it was well, and as soon as it reached the hip it was attacked by the same symptoms as were in the knee. When an affection passes from one part to another in this manner, it is termed *Metastasis*. There having been found a convenient name for the phenomenon, the subject is allowed to rest. The reason that no further explanation is offered on the subject is, that it has not been discovered. Effect of cold.  
Question  
Metastasis.  
The reason

Morbid  
element.

It is clear, however, that there is a definite element of some kind that is capable of migrating from one part to another, which is, moreover, an exciting cause of pain.

If driven  
out.

It is also clear that if the said element be totally driven out of its seat, the pain, and its accompanying symptoms immediately cease.

Relieved  
by the  
Pyonex.

There is scarcely a fixed pain of any kind, or of any length of duration, that cannot be removed by the Pyonex. The short time generally required to do this is remarkable. A few minutes often suffice. The writer has treated cases without number of this kind.

Ladies.

Ladies especially have come, stating that they had not been free from pain for weeks or months, but in almost every case a few minutes have brought relief, when the part has been treated by the Pyonex.

Counter-  
irritation.

The extensive counter-irritation caused by the application of the Pyonex partly explains this. The reason why the pain does not return is, that before the counter-irritation has ceased the exciting cause is being expelled from its seat, and is on its way to the surface. By this means, relief has been given in the severest cases of facial neuralgia.

Neuralgia.

In pain for  
thirty-six  
years.

On one occasion a lady stated that she had not been free from pain for thirty-six years. The seat of the pain was just over the spleen, and below the last rib. The opinion as to its cause was that there was an adhesion of the parts, which had been caused by local inflammation. On making a careful examination, however, this opinion did not appear to be well founded. By the application of the Pyonex the pain was quickly removed.

Relieved at  
once.

In every case of there being a fixed pain of long

duration, the application of the Pyonex is followed by an expulsion of purulent matter. The immediate relief of the pain is due to the counter-irritation produced by the perforations of the epidermis, and the action of the oil on the nervous peripheræ; and the reason why it does not return, is owing to the expulsion of the exciting cause. When the pain is in the soft tissues, the quantity of purulent matter expelled is fairly copious, but in some cases of rheumatic pains in the joints, it is surprising what a scanty expulsion takes place. Some explanation of this may be found in the fact that the bony, cartilaginous and fibrous tissues which enter into the formation of the joint do not part with the infiltrated pus as readily as other tissues.

Varying  
quantity of  
the dis-  
charge.

#### LIGHTNING DORSAL PAINS.

A patient, aged 45, complained of an excruciating darting pain in the spine, which attacked him nearly every day. It darted from the inferior boundary of the lumbar region, all the way through the spine to the cerebellum. It was of such a violent nature, and made him cry out so loud, that he could be heard by his neighbours at a distance of more than a block. He had had recourse to various methods of treatment, which in no way contributed to his relief.

Symptoms.

The Pyonex was applied to the whole of the spine. The quantity of purulent matter discharged was surprising. At every point where the instrument touched there was a bag of pus, besides which, the whole of the integument was covered with pustules. This was on the third day after the application; all the pus was removed and fresh cotton wool applied. The pain did not return.

Treatment.

Pain  
relieved.

Second  
application.

He came again some three months later, stating that he had continued free from pain, but he felt some slight symptoms, which were similar to those which he had before he was first attacked, and being somewhat frightened, wished to have another application of the Pyonex, so as to avoid the possibility of a return of the dreaded paroxysms. In taking this step he showed his good sense, as the second application was followed by a fair discharge of pus, after which he continued well.

Semblance  
to locomotor  
ataxia.

These pains, both in severity and locality, bore a close resemblance to those which accompany severe cases of locomotor ataxia, of which in the present case they might have been the precursors, but for the timely application of the Pyonex.

### TRAVEL OF PUS.

Long  
distance.

It is exceedingly interesting to witness the great efforts, that are made by the innate powers of the system, to take advantage of an outlet that may be provided in any part of the frame, whereby a morbid product, which may be lurking in any part, may be thrust out. Although it may be naturally inferred that an outflow of pus may take place more freely and rapidly when the perforations of the instrument are made in the immediate locality of the tissues that are infiltrated, it is nevertheless apparent that toxins, and purulent products of various kinds, will travel long distances in order to reach an outlet, and when, for instance, these toxins constitute the exciting cause of an eczematous diathesis, the outflow may go on uninterruptedly for days or weeks, or until the system is



quite cleaned out. A few instances will serve as illustrations :—

An application was made to a lady, the wife of a physician, to the back of the neck, solely with a view to relieve a headache. The next day she reported that the middle joint of the right index finger, which for months had pained on shaking hands, because of gout, was quite right again. In this case, the offending toxin had travelled through the whole length of the arm, and was expelled near the nucha. In another case the patient, a retired judge, had rheumatism in both wrists and elbows. The left arm, being the worst, was Pyonexed, a copious discharge resulting. Within a week he reported both arms being perfectly well. Here the toxin travelled up through the right arm, across the back, and part the way down the left arm, until it reached the perforations, where it escaped.

(1) Gouty finger.

Travel.

(2) Rheumatic arms.

Travel.

Although in the two foregoing cases the toxins travelled upwards, their specific gravity is higher than that of the blood, and they usually gravitate to the lower extremities, as shown by the purulent discharges from the calves, which are generally of thicker consistence, than those from elsewhere, and if placed in water they rapidly sink to the bottom.

Gravitation of pus.

Another case, where the cervical glands had been swollen over thirty years; during some Pyonex applications to the chest, the patient could distinctly feel a pulling sensation between the glands and the pustules, and the swollen glands were reduced in size. In this instance the lymphatic ducts served as channels for the passage of the gland impurities.

(3) Cervical glands.

Lymphatic ducts.

In another case, where a second operation for



(4) Hæmorrhoids. hæmorrhoids had proved ineffective, and an extensive application of the Pyonex was made over the back, the offending pus, which kept the affected parts in such a morbid condition, ascended and was expelled, the pain and inflammation disappearing on the following day, and the hæmorrhoids returning no more. The discharge of pustules was greatest in the integument nearest to the piles, and gradually diminished towards the nucha.

(5) Eczema. Another example was more remarkable. A case of eczema of twenty years' duration, of a married woman over 60. Every part of the system was charged with the eczema virus. Even the nose was red and swollen, the arms, body and legs always breaking out, and the irritation awful. A Pyonex application was made on the right leg where the disease was worst. Pustules quickly appeared, and were followed by a constant flow of a morbid serous fluid which continued for several weeks, the eczema disappearing from every part, and the nose resuming a reputable appearance. The patient stated that she could plainly feel the "disease" passing from every part of the body to the calf, even from under the finger nails and through the fingers and arms. In this case the distance covered by the flow was the longest that the human frame would admit of, and furnishes a fine example of nature's expulsive power when an outlet is provided. In fact, in parallel cases the application of the treatment may be compared to turning on the tap of a barrel of water, which permits it to run dry.

(6) Locomotor ataxia.

One more interesting case must suffice. In case No. 1, of locomotor ataxia, a few perforations were

first made on the back. The muscles were atrophied and there was little more than skin to puncture, so that only a little pus could be derived from the neighbouring tissues. But this treatment acted as a magnet to the pus which charged every part. The pus descended to the perforations, from the brain and eyes; it came from the hands and arms; it ascended from the feet and legs; it came from the stomach and intestines and other parts (the reader is referred to the detailed statement of the improvements as evidence), so that the treatment became a central well for the reception of these manifold contributions, in the same manner as the centre of a circle is to the radii. The quantity of pus which came to this centre was so great that it caused the upheaval of the whole of the integument which covered the part, and the time occupied in its removal was forty minutes.

Like a magnet.

Travel.

Central well.

### THE PYONEX OIL.

The oil which is used after the perforations have been made by the Pyonex instrument is necessarily of a decidedly stimulant character.

Stimulating.

It should not be sufficiently strong to produce vesication of the integument, but neither should it be so weak that it fails to produce a decided warmth within a few minutes of its being applied.

Strength.

Many combinations and different ingredients have been used in various localities as component parts of Pyonex oil, and as a matter of course, it is open to any practitioner to compound the oil of such ingredients as may commend themselves to his judgment.

Combination.

Composi-  
tion.

The basis of the oil may be either oleum olivæ or oleum amygd. dulc. Either one of these serves the purpose, but oleum amygd. dulc., being of finer tenuity, usually has the preference, and it has the advantage of being more readily absorbed by the artificial pores.

Lytta.

Another ingredient is lytta, and its function in the oil is a very useful one, as will readily be understood by every medical man.

All kinds of bacteria are attacked by this ingredient, and can be readily recognised by means of the microscope in the pus which results from its application.

Euphor-  
bium.

The third ingredient is euphorbium, and it appears by practice that the action of the lytta is decidedly accentuated by the combination.

Aromatic.

They work well together and produce no disagreeable results. If thought desirable, there is no objection to the addition of an aromatic oil, which may have the effect of communicating an agreeable aroma.

## CHAPTER X.

### *DISEASES OF THE ALIMENTARY SYSTEM.*

CACHEXIA, OR GENERAL INDISPOSITION.

DIABETES.

DIARRHŒA.

DYSENTERY.

EMESIS.

ENTERITIS.

GASTRALGIA.

GASTRIC ABSCESS.

HÆMORRHOIDS.

JAUNDICE.

#### **CACHEXIA, OR GENERAL INDISPOSITION.**

THERE are tens of thousands who are constantly Cachexia. suffering from one or more of a group of symptoms which are summed up under the term of cachexia or general indisposition.

There is no specific ailment, no local pain, no one symptom to which the patient refers, as being especially unbearable. But still the entire system is so Symptoms. out of gear, that the molehill is a mountain, and the grasshopper a burden. The state is described as that of bad health, or commonly as being "out of sorts." The patient feels a lack of interest in things in general. There is a listlessness and a conscious feeling that the vital powers are a long way below Below par. par.

This is at times accompanied by a feeling of

unequal to effort. Sleep is disturbed and the desire for food is but slight. There is no wish to take exercise, or even leave the house. Days are passed sitting in an armchair or lying on the couch, and the patient feels unequal to anything in the way of a change.

Cause. Such symptoms may result from an inactivity of the internal organs. The liver, the spleen, the kidneys, and the intestines, instead of working with freedom and vigour, are so inactive that the whole system is in a state of torpidity. It is a simple impossibility for the sufferer to perform the ordinary routine of daily duty.

What is the cause of all this?

Purulent infiltration. In every case of this kind, there is a quantity of purulent matter in the system. It infiltrates the tissue of every internal organ. It pervades the muscles and clogs the action of every part.

Treatment. Recourse may be had to tonics and change of air, but the patient does not rally for long, he falls back again into the old condition.

We give him an application of the Pyonex, and what is the result?

Relieved by the Pyonex. The morbid virus that was producing this state of affairs is expelled from the system in two or three days. The liver, spleen, and all the other organs, resume their proper functions; life and activity return to the patient, and he is once more a happy man.

Remarkable and interesting cases are not wanting where purulent infiltration has been discovered to be the cause of many years, or lifelong, miserable existence, when the symptoms have been quickly relieved by the expulsion of the virus that permeated the



tissues. But space will not allow for their narration, nor does it appear to be necessary, in order to show what may be accomplished in similar instances. The following cases may serve to give a good general idea of the morbid symptoms caused by pus, and of the relief which follows its removal from the system.

CASE I.

A young girl, aged 20, applied for advice, and related an extraordinary experience. Of medium height and engaging features, she has been an invalid all her life. She has suffered from headache ever since she can remember. She grew up lifeless, and with no energy. She has always had a feeling of sickness, and her face was always pale. When she was 13 years of age a purple eczema appeared on the face, and lasted for three months, after which it gradually died away. She has always been a poor sleeper, never remembers sleeping the whole night, and has only a succession of naps. Says she has a dreadful appetite and can never touch animal food ; obliged to adopt vegetarian diet. She always suffers from indigestion, always has a sick stomach in the morning. The body is always cold. She commenced to menstruate at 14, the blood being very scanty and almost black. She could never run, and walks with such an amble that she is ashamed for people to see her, and so she goes out only at night. She can sit and sew, but has never been able to do a day's housework in her life. She is always weak, and has to sit down while dressing. Although only 20, she looks quite 32, and her manner of	History and symptoms.
	Headache.
	Eczema.
	Insomnia.
	Appetite.
	Diet.
	Dyspepsia.
	Menses.
	Gait.
	No work.
	Weak.

Appearance. speaking and her movements betoken those of a middle-aged woman. Her neighbours say she seems quite as old as her mother, and looks it. Has always suffered from severe constipation, and never has an action without taking medicine; after trying everything, finds liquorice powder to suit her best. Her eyes have always been weak, and she could never face the light. She has a sharp pain at the back of the eyes every day. Two years ago she had to give up attempting to read small print. She has always had short breath, and cannot get upstairs without resting half-way. Her body has always been abnormally large, so that when young she wore long dresses, so as not to attract attention. The pain behind the eyeballs was so severe that on the doctor's recommendation, she had all the teeth in the lower jaw extracted, which resulted in not the smallest benefit. Her mother took her to Kimberley, in South Africa, to see if the sea voyage and change of climate would benefit her. She remained there for twelve months, and was then compelled to return, as she was always ailing. Twelve months ago the severe pain in the head began to be continued down the neck, and later on to travel down the arms to the elbows, and afterwards to reach the tips of the fingers. It was so sharp that she was compelled to release immediately whatever she might have in her hands. The pain has continued ever since. The breasts are well developed, but always quite cold. She feels fit for nothing, is always a charge to her mother, and is much distressed in her own mind because of the expenses that are incurred in vain attempts to procure her some relief from her despair-

ing condition. Medical treatment has been persevered with, but she does not remember to have felt any results from it.

We scarcely remember to have heard such a long list of ailments from any patient. At the time the patient applied she was attempting some house duties, but she said she could not take her food, and when the meal was before her, she turned away, only to weep.

We gathered from two of the symptoms (the Diagnosis. eczema and the dark menstrual fluid) as well as from the general cachectic state of the system, that her condition could be due only to the presence of toxic elements in the tissues.

With a view to ascertain the correctness of the Treatment first. diagnosis, a Pyonex Treatment was applied, first to the chest. Pus was expelled freely, but not in an unusual quantity. An improvement followed in the symptoms, she expressed herself as feeling better in every way.

Five days later a second application was made to Second. the chest, the discharge of pus being much the same as before. She continued to improve weekly. All the pain ceased, also the dyspepsia and weakness.

A fortnight later a third and last application was Third. made to the abdomen. After this the menstrual blood was natural in colour and quantity. A few days later she reported, eating and drinking well, and Resolution. sleeping soundly. She felt no weariness and could accomplish her duties with comfort, and considered herself well. The colossal waist rapidly disappeared, leaving one of elegant proportions.

The restoration was remarkable, and served as an

example of what great harm can be caused by a comparatively small quantity of toxic pus in the system.

### CASE 2.

History. A patient, aged 33, was cook in London four and a half years. Had to give up her situation through weakness and fainting. Is languid and has aching pains all over the body. A constant pain in the left kidney makes her feel ill. Has nearly always a cough. Suffers much during menstruation, which has been scanty for twelve months. Appetite good, but is not strengthened by food. Always wants to be sleeping. Never without cough and expectoration in the morning.

Treatment, first. On November 21 the first application was made to the back and chest. The resulting discharge of pus from the chest was very copious, but from the back scanty. On November 28 and December 5 the Second. applications to the back and chest were repeated. Third.

She reports feeling lighter and does not tire at her work as before. Three more applications were given up to March 6, producing copious discharge.

The dark marks under the eyes had now disappeared. She felt stronger and better in all respects. The hacking cough and expectoration had disappeared. She no longer felt sleepy during the day or suffered pain. The menses had altered in character, were no longer scanty or thin, but of a natural and proper flow, and unaccompanied by pain.

### CASE 3.

History. A patient, aged 30, tall, muscular, full-faced, exceedingly well-proportioned, and the picture of

health, applied for advice. Pulse, appetite, sleep, strength and tongue, were all normal, no pain anywhere.

He complained that he felt miserable and could settle himself to no work. He had a restlessness that proceeded from no cause that he could explain. He had come from a distance in the country for treatment, and had been in this state for several weeks.

He returned the third day after being treated by the Pyonex on the chest and back, stating that every unpleasant symptom had disappeared and that he felt perfectly well.

On removing the cotton wool, the skin was found to be in a perfectly natural state. It bore no traces of the treatment and there was not a pustule to be seen. On the chest and abdomen were three maculæ, about the size of a pin's head, which did not appear to contain pus.

This case was interesting as showing :

(1) That there is no morbid matter in the system of a person in perfect health.

(2) That pus is not generated by the application of the Pyonex.

(3) That when, owing to some non-apparent cause, there exists some nervous or other kind of unbalanced state of the system, the Pyonex acts as an excellent alterative in correcting it.

#### CASE 4.

A young man, aged 18, had diphtheria when nine years of age, and typhoid fever the following year. He has never been well since, and is always com-



- plaining of growing worse instead of better. He has gone into the country for change of air for three months every year. He has an extremely irritable
- Temper. temper, is restless and very nervous. He can settle his mind to nothing. He suffers from dizziness and
- Pains. pains in the back and head. He has been at college for eighteen months, but has a difficulty in studying,
- Memory. owing to a defective memory. He is melancholy and
- Debility. low spirited. Every time he walks only two or three blocks he has pain in the small of the back and is tired out. He has been so for six years. He resided at a country farm for two years for a change, but
- Catarrh. received no benefit. He has a chronic catarrh with
- Dyspepsia. a foetid discharge. He has distressing dyspepsia and but little appetite for food. He has had a constant
- Eczema. succession of crops of pustules on the forehead and face for six or seven years. While at college he is unable to join in any sport, and cannot take part in any of the entertainments; he goes to bed instead. His mother kept herself poor by trying every new method of treatment that was recommended.
- Treatment. The Pyonex was applied over the chest and back.
- Very copious discharge. The amount of pus that was expelled was almost unprecedented. The patient, in order to secure greater comfort, remaining in bed for three days.
- Improving symptoms. The pain and weakness in the back vanished, and a few days after, all the pustules on the forehead and face disappeared. He reported after returning to college that he could take part in the sports, and play lawn tennis and ball. He could study until midnight, whereas previously, he had been compelled to retire at 8 p.m. His digestion had improved and he could take long walks. The discharge from the catarrh was

diminishing and no longer foetid. His brother stated that his temper had entirely changed, and he was no longer irritable.

The long list of symptoms, in this case, in addition Etiology. to the chronic catarrh, were far in excess of those which are met with in the ordinary cases of general indisposition. In seeking their causation, our attention is directed to the fact of the patient having suffered from two severe diseases, one rapidly following the other. It seems more than probable that neither all the diphtheritic nor typhoid morbid elements were eliminated from the system, during their accompanying fevers. The supervention of typhoid, so quickly after the attack of diphtheria, found the system in a debilitated condition, and it is not surprising that the typhoid fever was of insufficient strength to consume the toxic exciting cause and expel it through the lungs. The symptoms of the case, especially the never-absent eczema on the forehead and face, constituted a strong evidence that the system was deeply invaded by purulent infiltration. The subsequent discharge of yellow pus, which was confluent, at every perforation of the instrument on the back and spine, and the rapid resolution, completed the evidence as regards the exciting cause of the symptoms.

### DIABETES.

Diabetes is a disease which is characterised by an abnormal formation of grape sugar in the system, so Excess  
of sugar. that all the tissues are to a certain extent sweetened. There is also a sweet taste in the mouth. This excess of sugar is excreted by the kidneys, and in the

- Excess of urine. process of its elimination from the blood, an inordinate amount of fluid is abstracted from the system, which sometimes amounts to as much as fifty pints per day. The water voided by the patient is usually clear and pale. Its specific gravity varies between 1025 and 1074, the normal specific gravity of health being 1020, and has a feeble acid reaction.
- Specific gravity.
- Percentage of sugar. As the disease advances, the quantity of the urine and its sweetness increase. It usually contains from 2 to 4 per cent. of sugar. As much as 10 and 15 per cent. has been found ; and the quantity passed in a single day has amounted to as much as 3 lbs. There is also a marked increase in the quantity of urea and ammonia.
- Wasting. The disease produces extreme emaciation. The withdrawal of so much fluid from the system causes
- Thirst. thirst, and dryness of the mouth and throat, which compel the patient to take copious draughts of water.
- Dyspepsia. Indigestion and vomiting are common symptoms. The pulse is weak and slow. The patient becomes feeble, the vision is weak, and the disposition irritable.
- Sciatica. Sciatica may come on in both hips, and prove very annoying, while any extra exertion may be followed
- Coma. by faintness, or what is termed diabetic coma.
- Duration. The course of diabetes is as a rule uninterrupted until it ends fatally ; the average time being between two and three years. It attacks men oftener than women, and usually those who are between the ages of 30 and 50 years.
- Etiology. The cause of the disease is enveloped in doubt and dispute. But the most rational conclusion we can come to appears to be that the abnormal formation of glucose is due to the imperfect function of

the liver, pancreas or spleen. One or more of these important organs may be at fault. Defective action of the liver is undoubtedly the cause in many instances.

The application of the Pyonex in this disease causes the expulsion of an unusually large quantity of pus. It does not, as a rule, confine its point of exit to any particular locality, but it simply pours out from the whole system.

The  
treatment.

Pus pours  
out.

On witnessing the amount of purulent matter which is expelled, it is easy to account for the interruption which the internal organs suffered, in the due performance of their individual function. If a certain predisposition or diabetic diathesis be among the exciting causes, we have here an ocular demonstration of the cause of such morbid predisposition.

Explana-  
tion.

Pre-  
disposition.

The expulsion of the pus is followed in a few days by an improvement in the symptoms. The taste in the mouth is not so sweet, the thirst is diminished and the quantity of water voided is lessened. The digestion is improved and there is a sensible increase of strength. The progress of the disease is checked and the patient is conscious of gaining ground. New hope springs up and recovery is anticipated with confidence.

Improve-  
ment.

Taste.

Thirst.

Progress  
checked.

These symptoms must not be expected until the patient has had time to recover from the feverish effects that may follow the application of the Pyonex. From fourteen to twenty-one days may be necessary for this, according to the condition of the patient. The application should be made over the chest, abdomen and back, in turn. The time for the second application must be decided on according to the condi-

General  
application.

Second  
application.

tion of the patient. Ten or twelve days usually suffice for the integument to resume its natural state. But if the patient is reduced to a state of extreme weakness by the disease, he may not feel equal to a second application until the lapse of three or four weeks.

Increased  
thirst.

The first three or four days which follow the first application, may be accompanied by more thirst than usual. But no notice should be taken of this, as it is due to the continuous counter-irritation and increased frequency of the pulse, which are caused by the treatment.

Less pus.

The second application will probably result in a smaller quantity of pus than the first, and the inconvenience to the patient is correspondingly less. Subsequent applications should be made continuously, until the pus which is expelled, dwindles to a very small quantity or almost disappears.

Diabetes.

A lady, aged 55, who was in perfect health and weighed 155 lbs., was attacked by diabetes.

Symptoms.

It commenced with an inordinate and increasing thirst and appetite, and the voiding of large quantities of water laden with sugar. The body began to waste, and in a few months was reduced in weight to 86 lbs.

Emacia-  
tion.

The muscles of the back were so absorbed that the spine protruded considerably. The legs and arms were reduced to a small size. The face was sunken and wore a most melancholy aspect. The strength

Weakness.

was so diminished that every exertion was a burden. The arms were incapable of lifting any articles of weight; whilst in order to ascend only two flights of stairs, it was necessary to rest midway.

Sweet  
taste.

She had always a sweet taste in her mouth, and was much troubled with indigestion and constipation.



About every five or six days she vomited about a wineglassful of clear bile. The acrid taste scalded her mouth and throat, and completely upset her digestion for some days. The specific gravity of the urine was 1051, and the quantity voided daily about six or seven pints.

Vomited  
bile.

Treatment with the Pyonex was commenced on April 29, 1895. The instrument was applied on the chest and back. In consequence of the ribs being covered only by skin, it was not possible to make the perforations evenly. On the third day after the application, the whole of the integument covering the back and chest was covered with well filled pustules, at every perforation of the instrument. The frequency of the pulse had increased from 70 to 82 during the last three days, the thirst had somewhat increased, while all the other symptoms were about the same. The higher pulse as well as the thirst were caused by the application of the Pyonex.

Pyonex.

Copious  
expulsion  
of pus.

More  
thirst.

May 14.—She reported some improvement. The thirst had somewhat diminished. The taste in the mouth was not so sweet. She was perceptibly stronger, and able to walk better. She had not been troubled by another attack of vomiting bile. The specific gravity of the urine was now 1046.

Less thirst.

No more  
vomiting.

May 29.—She expressed herself as “decidedly better.” There was still a freedom from the vomiting of the bile; there was a marked improvement in the digestion. The strength continued to increase and the sweet savour in the mouth to diminish.

Digestion.

Sweet  
taste.  
Second  
application

A second general application of the Pyonex was made on July 1.

July 4.—The amount of purulent matter resulting

Less pus  
expelled.

from the last application of the Pyonex, was only about one-third of the quantity of what was expelled by the first application. The inconvenience or extra thirst caused by it, were but trifling. The patient on being weighed was found to have gained 7 lbs. The face, from being sunken, was now round and had a good colour. The melancholy expression had disappeared, the arms and legs showed a marked increase in size. She was able to raise weights that before could not be moved. She had no unnatural thirst, and only drank the same amount of liquids as she used to before her illness. Her strength was rapidly increasing. Her legs were œdematous up to the knees and interfered with walking. They were ordered to be bandaged. The specific gravity of the urine was now reduced to 1035, and showed a considerable diminution of sugar on being tested.

*July 15.*—The œdema was much diminished, and caused but little inconvenience. An accident which caused her to fall violently on the back, gave a great shock to the system, and brought on a severe attack of diarrhœa, and reproduced to a small extent the former symptoms.

*July 24.*—She had now recovered from the effects of the fall, and immediately afterwards went away for a change of air, stating that she felt no further inconvenience from the disease.

### DIARRHŒA.

Diarrhœa. THE various forms of this complaint have relation  
Cause. to the inflammatory condition of the mucous lining of the intestines, or the defective function of the liver,

and other internal organs. When met with as a symptom of some other disease, such as typhoid fever or phthisis, it is dealt with under those heads.

Diarrhœa can as a rule be checked by the administration of suitable medicines. But there are many cases which resist medical treatment and continue for many months, until the strength of the patient is exhausted and he is incapacitated from duty. Chronic cases.

In the vast majority of such cases two or three applications of the Pyonex over the abdomen promptly relieve all the distressing symptoms, and the intestines again assume their due functions. In some cases which are quite exceptional, further applications may be necessary. They are always beneficial, however, even if the choleraic symptoms have disappeared. The system in such cases contains a rather large quantity of morbid matter and will be greatly benefited by its expulsion. Relieved by the Pyonex.  
Subsequent applications.

### DYSENTERY.

This affection is common in tropical countries. The debilitating effect of intense heat, and the impure emanations from decaying vegetable matters exposed to a broiling sun, are favourable to its development. Dysentery.  
Causes.

The acute form is accompanied by congestion and inflammation of the intestine. In most cases this is preceded by diarrhœa. There are frequent dejections of bloody mucus attended with pain, which is produced by spasm of the muscular coat of the intestine. The mass of feculent matter is retained by this spasm, while only a small quantity of muco-pus Acute.  
Dejections.  
Spasm.

is evacuated. The straining caused by the spasm  
 Tenesmus. is called *tenesmus*, while the pain which accompanies  
 Tormina. the operation is designated by the term *tormina*.

Fever. The fever is not usually high, but the temperature  
 Tempera- may rise to 102° or 104°. The tongue is coated and  
 ture. white, while the constant drain of fluid from the  
 Tongue. system produces great thirst.  
 Thirst.

Ordinary attacks of dysentery, such as are pro-  
 duced by partaking too freely of fruits and other  
 relaxing substances during the summer months, are  
 Opiates. usually controlled by opiates, cold milk diet and rest,  
 and last only a few days.

But the typical dysentery of a hot climate is of  
 Tropical. a more serious nature. The inflammation of the  
 muscular and serous coats of the intestines becomes  
 high, while the discharges of mucus and pus are  
 exceedingly frequent. So great is the irritation that  
 the wall of the intestine may be gradually dis-  
 organised. Ulceration follows, which may finally  
 Perfora- lead to perforation and death. When dysentery rages  
 tion. as an epidemic in hot climates its course is very  
 rapid. The strength of the sufferer is exhausted,  
 Death. and death may result from asthenia before perfora-  
 tion takes place.

When a patient has passed through the acute  
 attack, the ulcerated parts of the intestine often refuse  
 Chronic to heal, and a chronic form of the affection is thereby  
 form. induced. The same virus that produced the disease,  
 still permeates the system to such an extent that the  
 natural healing power is destroyed. This form of  
 dysentery is most persistent, and may continue to  
 afflict its victim for months or years, notwithstanding  
 medicinal treatment. Opiates, bismuth, chalk and

zinc may be administered at intervals as palliatives, while the strength of the sufferer gradually diminishes until the vital powers are exhausted and death ends the tale.

The Pyonex is of great service in dysentery, Treatment.  
whether it be of the acute or chronic form.

If applied over the whole of the abdomen and chest at the commencement of an acute attack, the effect is to check the pain and discharges at once. While the instrument is being applied, it has a most soothing effect on the patient. Counter-irritation. The counter-irritation diverts the virus, as well as the blood, from the congested and inflamed intestines to the surface. Copious pustules are rapidly formed, Pustules. and every symptom improves. A sound and prolonged sleep, and a cessation of the stools, are the usual results of the application, and in twenty-four hours the return of strength may be sufficient to enable the patient to sit up.

But the chronic form, where ulcerations of the If ulceration exist. intestine exist, is not relieved so quickly. The first application of the Pyonex will produce a marked result in lessening the frequency of the dejections, and imparting tone to the enfeebled parts. Subsequent applications will result in the discharge of a quantity of foul matter; the ulcerated intestines will begin to heal and at the same time be resuming their functions in a natural manner.

In the milder form of chronic dysentery, where Mild cases. there are no lesions of the intestines, one or two applications on the abdomen will generally suffice to restore them to healthy action.

The author made his first acquaintance with



Pyonex Treatment under the following circumstances :—

History.

While residing abroad he had suffered from an attack of chronic dysentery for a period of three months. Full trial had been made with the principal astringent and soothing medicines of various pharmacopœias. He was compelled to avoid everything of a vegetable nature in his diet; no fruit or vegetables could be tolerated; cold milk and cooked meats only could be taken. He rode some miles out of the city every day, so as to pass the night in pure country air, but these measures brought no relief.

Pyonex  
recom-  
mended.

He was recommended to try the Pyonex Treatment, and after deliberating on the subject, decided to do so, and to put it to the utmost test by ceasing either to take medicine or to observe his rigid diet. Fruits and vegetables were to be taken *ad libitum*. It might be objected that this was scarcely fair to the new treatment. But the object in view was to arrive at an unmistakable conclusion as to there existing any efficacy in it.

Treatment.

The Pyonex was applied over the back, chest and abdomen just before bed time, and a quiet night was passed. The next morning, about 7 o'clock,

Catarrh.

a rather violent attack of catarrh came on, the cause of which admitted of no explanation. The eyes watered, the nose ran with yellow mucus, and the voice assumed the characteristic hoarseness. This catarrh came on suddenly, and lasted just three hours, when every symptom of it disappeared. There appeared to be no way for accounting for the supervention of the catarrh, as the body had been well covered during the night, and a draught

was impossible owing to the construction of the bedroom. It was explained that this catarrh must have lodged in the intestines, and had now been driven out by the expulsive action of the Pyonex Treatment. The explanation appeared to be reasonable, and gave satisfaction as to its accuracy.

The renunciation of medicine and diet were adhered to, not a single dose of the former being taken, while fruits and vegetables were freely indulged in. It was rather surprising that, notwithstanding this, the dysentery immediately disappeared and not a symptom returned. As day by day passed it was no longer necessary to go into the country to sleep, the improvement being satisfactory in all respects.

No medicine taken.

Prompt relief.

On the third day after the application of the treatment, a quantity of purulent matter was expelled from the system, especially over the abdomen; and there appeared to be a good basis for the belief, that only the Pyonex Treatment would have accomplished the cure. Weeks and months passed without there being any return of the complaint. Two or three applications were subsequently made to the abdomen, each of which resulted in a copious discharge of pus, though not equal in quantity to that of the first two applications.

Discharge.

### EMESIS.

A patient, aged 30, proprietor of a chemist's and druggist's shop, asked if anything could be done for him, stating that for some months he had been vomiting several times every day. He could assign no reason for the irritability of the stomach. He was

Vomiting.

History.

naturally very strong and athletic, his habits were regular, his diet simple, he was married, and had a young family, and his business was good. He had been advised that his only chance of recovery lay in spending his time out of doors, and that he had better seek an occupation which would admit of his always being in the open air. His health had been running down, and he was getting worse from month to month. He had no appetite for food, however tempting ; he had no strength to attend to his business, and as soon as he had served a customer, he lay on his couch until again rung up, and was always sorry to hear the bell. His body was wasting away, he was thinner and weaker each week, and life was a burden.

**Symptoms.** An application was made over the whole of the abdomen, which resulted in a plentiful discharge of pus. In addition to the pustules expelled at the artificial pores, made by the instrument, large yellow pustules were thrown out on every part of the integument. The day after the application, the stomach was quieter, he vomited only twice instead of several times, but the following day the vomiting was more severe than he ever knew it to be, not in frequency, but the efforts were more violent, although there was but a small quantity of injeſta expelled.

**Treatment.** On the fourth day there was no vomiting, and he was able to take his food, a good rump ſteak, with relish ; he felt that the diſteſtion was going on all right and was comfortable. He could attend to the ſhop without inconvenience, and hardly lay on the couch at all. From this time he rapidly improved in ſtrength and tone. His body filled out, his face became plump, and his appetite ſuch as to make up

**Large pustules.**

**Second day.**

**Third day.**

**Fourth day.**

**Resolution.**

for lost time. The vomiting never returned, and he continued well in all respects. One application sufficed.

One appli-  
cation.

### ENTERITIS.

This affection is characterised by pain over the abdomen and tenderness to the touch; there may also be swelling.

Symp-  
toms.

It may exist as a symptom of various other affections, or it may be produced by severe cold, or excessive and irritating food.

Causes.

The acute form usually lasts eight or ten days, and is accompanied by fever, and often by diarrhœa. It may be controlled by hot fomentations, febrifuges and opiates.

Acute.

But the chronic form is usually not so amenable to medicinal treatment. It may last for years, and gradually undermine the system, so that the patient is no longer able to follow any occupation.

Chronic  
form.

This form may come on as a sequel to some malarial, typhoid, or other blood poison, and may be taken as evidence that there is a quantity of morbid matter in the system. The severity of the symptoms will bear an exact ratio to the amount of matter.

May be a  
sequel.

If the affection goes on unchecked, it may keep the patient in constant pain by day, and restlessness by night. The pain is much increased by an attempt to walk or stand, so that the upright position will not be maintained except from sheer necessity.

Pain.

Neither change of air, local applications, nor internal remedies afford relief in this case. But the application of the Pyonex over the abdomen, chest, and back meets the case. A quantity of matter is

Treatment.

Relieved  
by the  
Pyonex.

Pus. expelled. The pus may continue to flow for several days and form scabs on the skin of various sizes.

Fomentations. Hot fomentations, applied to the part on the third day after using the instrument, will be soothing, and help the flow of the morbid element. In long-standing cases, although the patient will be greatly relieved of the more distressing symptoms after the first treatment, it will take probably three applications to rid the system of all the morbid matter, and restore perfect health.

Three applications.

### GASTRALGIA.

Pain. Severe pain over the region of the stomach.

Caused by. This pain is sometimes of a distressing character, and is nearly always caused by spasm of the muscular coat of the intestine, or, it may be, by spasm of the stomach itself.

Ingesta. Attacks of this kind are, as a rule, caused by undigested food. The food that the stomach has been unable to digest, acts as a foreign body on the intestine, and prolonged and intensely painful spasms are the result.

Acute. These acute attacks are, as a rule, relieved by opiates, and hot fomentations, together with a good purge.

Chronic form. But the chronic form of gastralgia may continue for months and years. A long list of remedies are recommended for this affection; but they are mostly ineffective, as is evidenced by the continuation of the complaint.

Treatment. In these chronic cases the application of the Pyonex comes to our aid, inasmuch as it reveals the cause of the affection.



Its application over the whole of the abdomen is followed by a profuse eruption of pustules. The quantity of pus thus discharged is surprising, and demonstrates why the remedies were ineffectual. The pain ceases soon after the oil is applied, and as a rule does not return. Should there be some return, it will probably only be for a few hours. A second or a third application may be necessary in order to complete the cure. In any case the patient will do well to have the application repeated, while large quantities of morbid matter are being discharged. The result of the treatment will not only be the removal of the pain, but a marked improvement in the general health.

Quantity of  
pus.

Pain  
ceases.

Applica-  
tions  
should be  
repeated.

#### CASE 1.

A patient residing in London was subject to frequent attacks of gastralgia. The pain was referable to the left side. It appeared to be caused by the hard drinking water, being similar in its symptoms to other cases which are sometimes met with. The pain at first was but slight, and at times would cease, but as months passed it grew stronger, until it was severe; walking increased it, and no pressure could be borne around the waist. The pain was continuous during the day, but usually passed away gradually after retiring, and allowed of sleep. The patient's strength was constantly diminishing, until he was reduced to a state of prostration of the muscular and nervous systems, and suffered from severe dyspepsia, all his food turning acid. Medical treatment appeared to have no effect in allaying the course of the affection.

History.

Change of  
air.

He went into the country for some months and lost the pain, and afterwards spent a considerable time at the seaside, feeling much better in all respects. But suddenly, without any apparent reason, the pain returned, and was so severe that it continued through the night, and compelled him to rise from the bed. Narcotics and anodynes allayed it for the time, but it soon returned with marked severity. Walking or any effort of the body was impossible, and the clothes had to be worn loose, and food could scarcely be taken. The patient was 60 years of age.

Treatment.

An application of the Pyonex was now made over the whole of the abdomen, which resulted in the expulsion of an extraordinary quantity of pus. In many places it was confluent, being of a light yellow colour and quite viscid. The pain passed away in a few hours, and on the second day after the application the patient walked a long distance over hilly country without pain or discomfort of any kind. A good appetite returned and no further trouble was experienced.

#### CASE 2.

History.

Pain.

A minister of the Baptist Church, age 40, stated that he had been suffering from severe pains in the abdominal region for a period of twelve months. It was constantly on the increase, and troubled him most when he attempted to walk or stand. For six months he had not been able to preach a sermon standing, but was compelled to sit on a chair at every service. If he attempted to walk, the severe pain stopped him. He was obliged to ride on horseback to get from house to house. His strength was

diminishing, and he feared he would soon have to discontinue his labours.

After a careful examination of his case, it appeared evident that his ailment was due to purulent infiltration of the whole of the abdominal region.

The Pyonex was applied to the chest and abdomen. The pus poured from him in such a quantity that not only did the perforations of the instrument become confluent, but the whole of the integument which was between the perforations also became covered by pustules, which invaded each other, so that the whole of the abdomen was covered. The pus continued to ooze and dry up, until the entire surface was spread over with a thick crust, which crumbled and disappeared after a few days. The pain ceased at once, and the use of the legs soon returned. In a fortnight he preached a sermon, standing all the thirty minutes which it took to deliver. He said he was overwhelmed by the congratulations of his friends.

Treatment.

Copious discharge.

Crust formed.

### GASTRIC ABSCESS, SEQUEL TO MEASLES.

A school boy, aged 13, had the measles, and while the rash was still out bathed in a river. This drove the poison back into the system, and on the following day he began to vomit. The vomiting continued every day for a year and eight months. He was treated by various physicians during the first eight months, but all the time grew paler and thinner, until he was reduced almost to a skeleton. The stomach rejected the medicines as well as the food. He was at last given up, and his parents were in-

History.

Emesis.

formed that he would probably not live more than two or three months.

**Treatment.** At this time the Pyonex Treatment was recommended. Applications were made regularly every ten days over the back and chest during a period covering over twelve months. Every application resulted in the discharge of a quantity of pus. The effect of the treatment was that the fatal progress of the disease was arrested. Life was preserved, but there was not a sufficiently decided improvement in the character of the symptoms. He was advised by his friends to discontinue the treatment, but refused to do so, as it had so far saved his life, and was his only hope.

**Bursting of abscess.** In the thirteenth month he suddenly vomited over a pint of foul pus. The abscess, which had been so long forming in the stomach, had burst. The vomiting ceased, and his appetite soon became ravenous. He began to grow rapidly, his growth having almost  
**Resolution.** ceased for twenty months. He eventually became strong and muscular, and never had a relapse.

The case is interesting as showing the possible ends that may be attained by the treatment when it is persevered with.

**Inflammation of the stomach.** Gastritis or inflammation of the stomach may be present as a symptom of other affections or may exist alone. It is known by pain and tenderness  
**Symptoms.** over the abdomen, and the inability of the stomach either to retain or digest food. Attacks of gastritis may be acute, sub-acute or chronic. When the attacks are severe and prolonged, the strength of the patient is completely exhausted, from want of food. The patient  
**Danger.** is liable to succumb, death taking place from asthenia.

The usual methods of medical treatment for this affection are ineffectual to bring timely relief. Treatment.

In making use of the Pyonex, regard must be had to the state of the affection. If an application be made over the abdomen and chest, before the symptoms are aggravated, some relief will, as a rule, be obtained in a short time, and no further trouble may be experienced. But if the pain be too severe to admit of an application over the stomach, the chest and back may first be treated, and after the lapse of a day or two the stomach will probably tolerate an application. The Pyonex.

In cases of inflammation of the intestines, the above remarks will serve as a guide for treatment. Inflammation of the intestines.  
The results are very satisfactory, and quickly realised.

### HÆMORRHOIDS.

Notwithstanding the many excellent remedies there are for this affection, it is one which is exceedingly troublesome, and may oblige those who suffer from it, to forego their usual occupation and remain indoors, or in bed for several days at a time. Piles.

In those cases in which no inflammation exists, there is comparatively little inconvenience, but when there is pain, swelling and redness, the inflammation may extend to the surrounding tissues, and make any movement of the body a painful operation. Non-inflammatory cases.

The question for us to consider is, What relation the application of the Pyonex bears to this malady. It acts in three ways. When the piles are inflamed, the application of the Pyonex diverts the blood from the part, and the inflammation is thus lowered. By means of the extensive counter-irritation which is set up over a large surface of integument, the revulsion and depletion are effected in a high degree. It also Action of the Pyonex.  
Revulsion.  
Depletion.



Cleansing. purifies the system of its purulent matter, and in this manner increases its healing power.

With the lowering of the inflammation, the urgent symptoms are modified, and the hæmorrhoids diminish in size.

Case. The following case serves to show the different effects of the usual plan of treatment, and that of the Pyonex.

Operation. A patient, on having a severe attack of hæmorrhoids, was unable to leave his bed, and every motion of the body was accompanied by pain. The surgeon who attended him applied anæsthetic ether to the inflamed pile, and then made a longitudinal incision; a clot of blood was removed, and in four or five days, the part had sufficiently healed to allow of the patient leaving his bed.

Relapse. Only a few days elapsed when the malady was reproduced, owing apparently to a warm bath. Several days passed without there appearing to be any improvement. He was in constant pain, and unable to walk. The inflammation showed no disposition to subside.

Pyonex applied. The Pyonex was now applied closely, over the lumbar region, and over the whole of the back. On the following morning the inflammation had so subsided, that the patient was able to walk comfortably. The improvement steadily continued, and in the course of a few days the hæmorrhoid dried up and completely disappeared.

Quick relief. By the application of the Pyonex in this instance, not only was the pain of a second operation avoided, and the inconvenience of subsequent poultices, but the result was of a more satisfactory nature, and the time in which relief was obtained was notably less.

Comparison.

## CHAPTER XI.

### *DISEASES OF THE ARTHRITIC SYSTEM.*

GOUT : ITS SYMPTOMS AND TREATMENT.  
ALSO THE DISCOVERY OF THE GOUT BACILLUS.

LUMBAGO.

RHEUMATISM : ITS SYMPTOMS, ETIOLOGY,  
EFFECTS OF THE PYONEX TREATMENT. SIX CASES.  
RHEUMATOID ARTHRITIS.

#### **GOUT : ITS SYMPTOMS AND TREATMENT, ALSO THE DISCOVERY OF THE GOUT BACILLUS.**

THE first attacks of gout, which are comparatively transient, usually come on during the night, and the part generally attacked is the large joint of the great Great toe. toe. The entire joint and surrounding tissues become swollen and inflamed and very painful. The pain Pain. may be intense or excruciating, and is compared to the tearing of the joint with a pair of pliers, while the throbbing is severe, and increased by the step of a person crossing the room. The paroxysms may occur every night for a week or more, after which their strength diminishes and the attack passes off.

During the progress of the disease, these attacks Frequency of attacks. have a tendency to recur with increasing frequency, according to the time which the patient has been subject to them. After the lapse of some years, the interval between them gradually diminishes, until the attacks almost run into one another. Severe chronic gout is then established.

Order of  
attack.

The usual course of the affection after attacking the great toe joint, is to invade the heels and ankles, then upwards to the knees, involving the tendons in the popliteal space. The hands and wrists may be invaded after the feet and ankles, and before the affection reaches the knees. The elbows follow, the lumbar region of the spine is then commonly attacked, the symptoms resembling those of ordinary lumbago. The shoulder and hip joints are the last to be reached.

Chalk  
gout.

As the disease advances, the joints become enlarged and partially ankylosed. In some cases, solid concretions or chalk stones are formed, which work their way through the skin, causing much suffering and terrible deformity of the parts. The hands and feet become distorted and crippled. Chalk nodules may appear in the ear, eyelids, or face. The system may finally become so charged with gout toxins, that the stomach or heart may be attacked and terminate life.

*Etiology.*

*Etiology.*—As in the case of rheumatoid arthritis, the number of theories which were adduced in connection with its causation or exciting cause, could all be laid aside, when it was demonstrated that the disease was caused by a micrococcus, which was proved to produce formic acid ; so in the case of gout, the fact of its being caused by a bacillus, will set our minds at rest, and enable us to account for the various symptoms and changes which take place during the initiation, progress and termination of the affection.

Gout  
Bacillus.

The gout bacillus<sup>1</sup> closely resembles that which

<sup>1</sup> See plates at commencement of Book.

is described as the anthrax bacillus. Under low magnification, a well-developed colony resembles a tangle of pieces of string and fine threads. The thicker filaments are composed of a number of minute lines of the bacilli approximated and parallel to each other, while the leptothrix, which is somewhat abundant, is remarkable for its length and the loops which it forms. These loops extend a long way beyond the field of the microscope, and have to be followed carefully for their full extent to be discovered. Under higher magnifying power, the apparently shapeless mass, in places, assumes graceful and artistic curves, and the separate bacilli are distinctly visible in their sheaths, in symmetrical and well-arranged lines. These colonies, which have on the whole a somewhat homogeneous appearance, may exist in great numbers in chronic gout, and may be collected in quantities, as they are thrown out, in combination with the pus which is discharged, after an application of the Pyonex.

A colony  
of the  
bacillus.

Expelled  
with the  
pus.

The presence in gout of the infinitesimal number of crystals which are principally composed of uric acid, in combination with the bases of sodium and calcium, may now be satisfactorily accounted for. Also the blue-green pigment, which in very chronic cases is formed in sufficient proportions to give to the facial integument its characteristic cyanosed tint.

Urates.

Pigment.

#### THE URIC ACID CRYSTALS AND PIGMENT.

The successive crops of uric acid crystals that pass through the ureters in gout, are no doubt formed by the myriads of gout bacilli which invade the system. They continue to multiply year by year, until the

Uric acid  
crystals.

vital powers give way, under the lowering effects of their pathogenic productions. The solid crystals are thrown out, after the saturation by them of every tissue is completed, and there is in fact no room for its further accommodation. There is, however, a sudden cessation of the appearance of these crystals as soon as the offending bacilli are expelled.

Bacillus  
pyocyaneus  
and pig-  
ment.

The formation of blue-green pigment by bacilli is usually attributed to one bacillus only, which is denominated the bacillus pyocyaneus. But since there are so many pigment-forming bacilli, we are not prepared to assert that there may not be others which may have this faculty. In fact, in the present instance, before a distinct set of experimental tests have been made with the gout bacillus, the natural course seems to be to attribute to it this production. None of the ordinary bacilli pyocyanei were discovered in the gout pus which was expelled by the Pyonex Treatment, and when in addition to this fact, the formation of the pigment is suddenly suspended on the expulsion of the gout bacillus, there appears to be still further reason for coming to the foregoing conclusion.

Toxic  
character  
of pigment.

The blue pigment has been separated, and it is stated that inflammation and speedy death has resulted from its introduction into guinea pigs. But in the present case, the Pyonex Treatment separates it from the tissues in a pure state, and expels it in quantity from the system. The rapid improvement in the patient which follows its expulsion, furnishes proof of its morbid character.



## THE BACILLUS OF GOUT.

Bacteriological research furnishes us with the proof that two bacilli which are similar in appearance may be endowed with functions and productive powers of an opposite nature. The pure anthrax bacillus, for instance, and the gout bacillus, which resemble each other in form, are alike, in that the virus formed by them is not confined to any special locality in the body, as in the case, for instance, of the bacillus of diphtheria, which is found only in the fauces and larynx, or the bacillus tuberculosis, whose habitat is the lungs. But the important point of difference between them is that the true anthrax bacillus secretes a deadly virus, which on being carried by the circulation to every part of the system, produces the most dire results; whereas the products of the gout bacillus are of a comparatively mild character, and vent their principal ravages on the joints and connective tissues. There seems to be every reason to conclude, that since the cyanosed appearance of the countenance is due to the blue pigment which is secreted by the bacillus, that the elements of this blue discolouration actually permeate the whole of the tissues, and that the reason why it is more visible in the countenance than any other part of the frame, is due to the fact that the integument which covers the countenance, owing to the frequent ablutions to which it is subject, is somewhat more transparent than that which covers the body and extremities.

Anthrax  
and gout  
bacillus.

Functions.

Blue-green  
pigment.

We know of no disease in which the varied productive powers of any micro-organism are so remarkably exemplified, as in the extraordinary

Etiology.

Productive  
powers of  
bacillus.

qualities which are displayed by the gout bacillus. The proofs which are adduced of the faculties which are possessed by bacteria to form acid, alkalies and pigment, are here demonstrated in the plainest manner. And whether we seek quantity or quality, the evidence is equally surprising. Also the natural tendency of the bacillus to produce alkalies in larger proportion than acids, is clearly shown.

Cause of  
first attack.

In the initiation of gout, the attacks are comparatively mild, of short duration, and the interval between them is mostly of long duration. These circumstances are accounted for, by the fact that the bacilli are now few in number, the quantity of acid or alkali secreted by them is small, and is mostly worked off through the kidneys during the attack. The system then enjoys a period of rest, and the length of this period depends on the time that may be necessary for the bacilli to produce another quantity of uric acid and alkalies, that may be sufficient to settle in the most susceptible part and produce another attack.

#### ETIOLOGY OF GOUT.

Cause of  
attacks.

The subsequent frequency and violence of the attacks will be referable, as regards their cause, to the constant multiplication of the bacilli in the system, and the continuous additions of the gout toxins which are produced by them. These toxins are all the time on the increase, until at length the whole system becomes infiltrated by them, and the severest symptoms of the affection are manifest in every part of the frame.

We may now glance at the reasons why the great toe is so commonly the first point of attack.

The great toe, why attacked.

The uric acid crystals as well as the alkaloids which are conjointly formed with them, naturally gravitate to the lowest parts of the frame. As soon as the minute crystals become too large to pass through the capillaries with the arterial current, their progress is checked by the ligamentous tissue which is thickest, and offers most resistance. As the ligaments of the great toe are of this description, the crystals are gathered together in great numbers, in and immediately around the joint. The presence of so much pathogenic acid causes the inflammation, pain, and swelling, which are the prominent symptoms of the attack.

Gravitation of crystals.

and checked progress.

While the disease is in the ascendancy and the store of gout toxins is rapidly increasing in volume, the ligaments of these joints, which are formed of the most compact tissue, oppose themselves as the greatest barriers to the onward passage of the fine crystals: consequently the joints are successively attacked; the larger ones first and the others subsequently. When the fibrous tissues are fully infiltrated, the excess of crystals may be diverted to the stomach or other central organs.

Other joints.

The joints.

The quantity of calcium and sodium formed by some bacilli, such as are not met with in gout, apparently differs greatly to what is formed by others. Their large colonies may be met with in immense numbers, without there being a semblance of the formation of chalk stones or nodes. When the disease is far advanced there may be a prolific multiplication of these bacilli colonies, and when in

Formation of alkalies.

Chalk stones and nodes.

such instances, the alkaloid formation is an active function, and the circulation becomes charged with calcium and soda; wherever a slight barrier is opposed to the course of the blood, such as happens in the cartilage of the ear or the fibrous tissue of the finger joints, and in other localities, the first particle of alkali that is arrested is quickly joined by another particle, and this process goes on rapidly until the chalk stone or node is formed.

Crystals in  
pelvis of  
kidney.

The parenchyma of the kidney appears to provide some facility for the passage of these uric acid crystals into its pelvis, whence such quantities are conveyed away through the ureters. When these quantities are large, we can only conclude that the whole system is surcharged with gout bacilli.

#### THE GOUT BACILLUS.

Discovery  
of the  
bacillus.

In severe cases of gout of long standing, if the discharge which results from an application of the Pyonex be subjected to microscopic examination, well developed colonies of the gout bacillus are readily discovered. These colonies, which form independent bundles, are of far too large dimension to have passed through the capillaries, and it is not quite apparent by what process they are brought to the surface of the integument. As they may only appear after various applications have been made, it does not seem probable that they usually exist in numbers near the surface; but it is more probable that they are gradually worked out of the system from the deeper tissues, in the same manner as sometimes happens to a foreign body; a needle, for instance, that has long remained embedded in the soft tissues.

The colonies may, however, be thrust out in comparatively large numbers, after the application of the Pyonex, without being accompanied by pus or serum. They come out in a dry condition, and may be removed from the body between the thumb and finger. They may continue to be expelled for several days, and in such numbers that the supply or store seems well nigh inexhaustible. There is quite a disagreeable irritation at the points of exit, but after the appearance of the crops has somewhat abated there is a manifest improvement in the symptoms. A sensible relief is experienced, accompanied by an increase of power and motion of the joints.

Expelled  
without  
pus.

Effects.

#### EFFECTS OF THE PYONEX TREATMENT IN GOUT.

The effects of the first and second applications are usually noticeable in a sense of relief from the burden which oppresses the patient. There is a marked improvement in the spirits, and cheerfulness is restored: this is owing to the withdrawal of so much gout toxin from the system.

Cheerful-  
ness  
restored.

*Pain.*—Pain in every part is soon removed. It is lessened when an application is made to the back or chest, but completely relieved when the instrument is applied in the neighbourhood of the painful joint. A few hours usually suffice to accomplish this, and at times only an hour or two.

Pain.

*Power of Motion.*—When joints have been immovable for a long time, the return of motion depends on the absorption of the swollen and indurated tissues. To accomplish this an extended course of treatment

Motive  
power.



is necessary. Some motion may be discoverable in three or four weeks, or less, and it increases steadily with the continuation of the treatment. Joints that are in a swollen and painful state, owing only to the immediate attack, improve rapidly and soon recover.

Appetite,  
&c.

There is a marked improvement in the appetite and digestive powers in the early stage of the treatment. Beef and ordinary wines can be taken without apparent harm, and a special diet need not be observed. Ale cannot be taken until full recovery is established.

Inflamed  
joints.

The swelling and inflammation of the joints generally subside quickly. But some cases are stubborn, principally those of the fingers and back of the hand, in which, though there is a perceptible improvement from day to day, the progress can only be said to be gradual. The knees, elbow and great toe joints usually yield rapidly.

Restoration  
of healthy  
urine.

An important improvement that calls attention in the early stage of treatment is the cessation of turbid urine. Although the water may have been loaded with lithates and purpurates, and have been cloudy several months; during the few days following the inception of treatment there is a decided improvement, and quickly afterwards it becomes perfectly clear. The excess of the gout toxins being now eliminated from the system by the treatment, the kidneys resume their natural functions, owing to the improved condition of the blood and tissues.

Uric acid  
crystals.

Another interesting item is the total disappearance of uric acid crystals from the voided water. In severe attacks of gout this improvement may take place early. But in very chronic cases which are of a

subacute character, there are occasional returns for an extended period; but finally they cease.

The blue-green pigment, which is so freely formed by the gout bacillus, in some cases, after the affection has become chronic, may not readily yield to the treatment. Several applications may be made before this toxin makes its appearance with the discharge. The first indications that it is about to be expelled in quantity are a few isolated pustules of blue-black appearance, here and there on the maturing of the discharge. Suddenly, after this notice, without any further indication, the whole of the discharge, instead of being of the usual light yellow colour, may be of a blue-black. The pustules have the appearance of being filled with tar. Not a single yellow pustule appears. Pus cells under the microscope cannot be recognised owing to the black colour, although they probably exist. This pigment being expelled from the system, the cyanosed appearance of the countenance disappears, the skin becomes clear and the complexion natural. Although this pigment is so clearly discoverable in the countenance, which furnishes proof of its entering the general circulation; still it appears to gravitate to the lower extremities in a remarkable manner. We do not remember that a single pustule has ever been expelled from the trunk or upper extremities, having this dark appearance. The thighs and calves only, yield the black crop. There does not appear to be an entirely satisfactory reason why the expulsion of this dark toxin is so long delayed. It may be that its principal habitat is in the deeper tissues, and therefore the effects of the treatment are delayed in reaching it.

Pigmentation.

Blue-green pigment.

Its discharge.

Cyanosis disappears.

Expelled only from lower extremities.

Expulsion of the pigment.

We have known of several applications being made to the calf before a very copious expulsion of pus was effected, which relieved the affection. This pigment may partake of the same nature and require a greater effort for its expulsion.

Nodes  
dispersed.

The egg-like swellings or gout nodes, which appear on the upper extremities and persist for several days, during an attack of gout, and cause great discomfort to the patient, are dispelled in a few hours by an application of the Pyonex in their immediate vicinity.

Recurrence  
of attacks.

When reasonable care is taken in the diet and exercise, and the treatment is not neglected, there is no reason why there should be a recurrence of an attack of gout. The cause which led to the last attack has been removed. The last attack has been cut short. The exciting cause, instead of having the opportunity to become further developed as formerly, is now being constantly diminished and weakened, as every succeeding application is made. The tendency to the repetition of an attack is less every day. The strength and tone of the system are steadily improving. Every circumstance that would favour the advent of an attack is being annihilated, and returning health is assured.

Grey hair  
restored.

One of the effects caused by chronic gout appears to be to turn the hair grey—prematurely. The renovating effect which is produced in the blood and tissues, by the withdrawal of impurities from the system by the Pyonex Treatment, is demonstrated in these cases by the fact that the grey hair gradually reverts to its former natural colour.

Exercise.

Very soon after the commencement of the treat-

ment the patient is able to begin daily exercise, and as the cure progresses it is rather surprising to see how quickly the efforts in this direction may be increased without producing another attack. The commencing half hour's walk may soon be increased to an hour, and as the strength returns rapidly, two or three hours may be employed in exercise that is not of a violent nature, without causing any untoward effect. Cold winds and temperature have to be guarded against. The treatment at its commencement does not make the system proof against an attack of gout, when the body is subjected to too low a temperature.

When the system has been extremely reduced Cold. by gout in combination with rheumatoid arthritis, its symptoms are relieved but slowly, *i.e.*, *pari passu* with the relief of the arthritis.

Of the cases which follow, the treatment of the Cases. first, which is given in minute detail, may serve to demonstrate the frequency of the Pyonex applications that may be necessary, also their results, and the progress of the patient.

Three cases of gout are appended :—

(1) A case of twenty years' duration, of a very severe character. The treatment is given *in extenso*, and is of much interest as an example of gout caused by the gout bacillus. The treatment was continued about six weeks, and resulted in permanent resolution.

(2) A case which shows how gout may be immediately eradicated from the system, if treated on its first appearance.

(3) A case of several years' duration which was relieved by five Pyonex applications.

## GOUT. CASE I.

Twenty-  
years.

A patient, aged 55 years, solicitor by profession, of full habit, has suffered from gout for twenty years. It first appeared after a sprain in the right ankle. Transient attacks came on in the hands and feet for several years, until the sixth year, when he suffered a severe attack in several joints and was unable to leave the house for about four weeks. During the next fourteen years he had usually two severe attacks in each year, one in the spring, and one in the fall. These lasted on an average a week or ten days, one foot and one hand being implicated each time. But the knees and fingers were repeatedly attacked, and year by year the tendency of the attacks was to become more severe.

First severe  
attack.

Two  
attacks  
annually.

Gradual  
invasion.

All this time the disease was gradually invading the whole system. But little exercise could be taken, and the usual strict diet for gout had to be observed.

Gait.

The gait became hobbling, and there were constant minor attacks, which compelled absence from business.

Frequent  
attacks.

The hair  
and face.

The hair had become grey, and the countenance had become so cyanosed as to cause his friends to remark that they scarcely knew "if he was bluer or greener."

Retrospect.

*Note.*—Up to this time it is interesting to take a retrospect of the work which the gout bacillus was accomplishing. At the commencement of the affection the bacilli were few, and the quantity of gout toxins they were able to produce, sufficed only to produce transient attacks in the feet and hands. In process of time, as the bacilli so multiplied that many colonies were formed in various localities, the production of the urates of soda and calcium became more active, and the gout attacks became more

The  
gradual  
develop-  
ment of the  
bacillus,  
&c.



frequent. The joints, which formerly remained swollen only during the attack, were no longer able to resume their natural dimensions, but remained permanently swollen.

With the continued multiplication of the bacterial colonies, the gout toxins were so increased that every tissue became invaded, so that not only were the attacks more frequent, but their increased severity was marked, as well as their prolonged duration. We note also that the formation of the blue-green pigment, which apparently does not constitute a symptom during the milder stages of the disease, now begins to be of a marked character. The bacilli appear not to have the faculty of forming this pigment in large quantity until they become exceedingly numerous, and are of a high and perfect development.

Increase of  
toxins.

The pig-  
ment.

The growth and multiplication of the gout bacillus in the human frame, cannot apparently be said to be accomplished except by slow degrees. In the case under our notice, the time occupied from the inception of the affection to the blue discolouration of the blood, as manifested by the cyanosis of the countenance, and permanent swelling of the joints that were principally attacked, ran into something like sixteen years. After the cyanosis first became perceptible, it became steadily more pronounced from year to year, until the system became freely impregnated with this poisonous element.

Gradual  
multiplica-  
of the  
bacillus.

Sixteen  
years.

Cyanosis.

Judging from the deleterious symptoms manifested by the patient during the stage of pigmentation, we have apparently good reason for concluding that this blue-green toxin is of a decidedly morbid character. The reason which would lead us to such conclusion,

Toxic  
nature.

- When expelled.      apart from the severe effects which we discover in the patient, appertains more especially to the effects which are produced when the patient is under the Pyonex Treatment. In the present case, as will be noticed further on, this toxic pigment was thrust out in extraordinary quantity at one stage of the treatment, and from that time there was a marked improvement in the progress of the recovery.
- Severe attack.      On December 29 of the eighteenth year of the disease, a severe attack commenced in the right wrist. On the following day the right foot was attacked, and he was confined to bed. During the next five
- Joints.      days the symptoms much increased in severity. Both wrists, both knees, and both ankles were invaded, in addition to nearly all the fingers and toes. This
- Eight months.      attack lasted for eight months and thirteen days. During much of this time he was in bed and was unable to move hand or foot. He had to be raised in bed and to be lifted in and out, and was carried from one room to another. At times he would be able to sit in an easy chair in another room, and once or twice he was downstairs to breakfast, and able to take a carriage drive.
- Stiff and swollen joints.      The feet, ankles, fingers, hands and wrists, were severely swollen and painful, the wrist and finger-joints were so fixed as to preclude the possibility of writing.
- Six months' interval.      At the conclusion of this long attack there was an interval of about six months, during which time he was able to be driven to his office and devote some time to business. If he attempted to walk, or take any kind of exercise, an attack of gout would result immediately.

The knee-joints, ankles, wrists, and fingers were permanently swollen, so that all movements were performed with difficulty, and a swaying of the body from side to side. In going up and down stairs each step had to be occupied by both feet, and the operation was always accompanied by pain in the knees, ankles and toes. There was no appetite for food during several weeks, and the body and limbs were exceedingly wasted, the legs, which in health were exceedingly muscular, being like umbrellas, and the arms about one-half of the normal size. The symptoms were so severe that it was feared that he would have succumbed during this attack.

Permanent swelling.

Emaciation.

During the last twenty months the urine had never been clear. It was always loaded with urates and uric acid crystals. The entire system was at this time infiltrated with urates, the ligaments and cartilages of the joints being enlarged and congested.

Urine.

The subsequent and last severe attack commenced with the swelling of the left little toe and right great toe in the twentieth year of the disease. On the third day of attack the right wrist and left little finger were much swollen and inflamed, and he was compelled to remain in bed. The rapidity with which the disease now invaded the fingers, wrists, elbows, knees, feet and toes; its violence, and the swelling of the parts, exceeded anything that he had ever seen, and he considered that in all probability he would be laid up for several months in bed, and have to pass through a worse ordeal than that of the previous attack.

The last and severest attack.

Rapid invasion.

## GOUT. CASE I.—TREATMENT.

Treatment. The Pyonex Treatment was now commenced.

First application. The first application was made to the chest and back, with a view to produce the largest possible expulsion of the gout toxins from the body. The result was a fair discharge of light yellow pus, which was unattended by any symptom.

Second application. Two days afterwards, the right arm, thigh, and leg were treated. Although the patient was so ill, so great was the confidence in the efficacy of the treatment, that a promise was made to him that within a week he would be downstairs and able to receive his friends.

The result of the second application was a further discharge of pus from the whole surface covered by the treatment.

Third application. On the sixth day, another application was made to the left arm, leg, and thigh. This completed the covering of the body with the treatment. The purulent discharge was not copious, but still of a satisfactory quantity.

Improvements. On the completion of a week from the commencement of the treatment, there was a decided improvement in the condition of the patient. The swelling and inflammation had disappeared from the fingers of both hands, and some motion was restored to the right wrist. The constitutional symptoms of weakness and distress had much diminished, and the general tone improved. He was able to sit up in bed and write some letters.

On the ninth day, the pain and inflammation had disappeared from every part. Strength was returning rapidly, the appetite was good, and sleep sound and

uninterrupted. The patient dressed without assistance, and went downstairs with less pain than he had done at any time within the last eighteen months. He received and entertained his friends without an effort. The above-mentioned promise was thus fulfilled.

On the following day the fourth application of the Pyonex was made to the right upper and lower extremities. The next day he went up and down stairs without any pain whatever. He said that he was convinced that but for the Pyonex Treatment he would now be confined to bed, and be in the worst stage of his attack. The swelling had disappeared from all the fingers except the left little finger, which had been distorted and swollen for some years.

As he was doing well, the next application was not made for eleven days, when the chest and left leg were treated. The discharge from the last two applications continued to be of a satisfactory quantity and quality, being of the same light yellow colour; but here and there a dark-coloured pustule appeared, indicating the expulsion of the blue-green pigment.

In the following week, which was the fifth week of treatment, an inflamed swelling, about the size and shape of a small egg, appeared on the left elbow. The Pyonex was at once applied to the left arm, with a view to disperse it. This characteristic gout node, which was similar to others which had appeared during previous attacks, and lasting four or five days, had almost disappeared by the evening, and was completely absorbed by the following morning.

On the thirty-seventh day of treatment, the seventh application was made to the right arm and

Fourth application.

Improvements.

Fifth application.

Gout node.

Sixth application.

Absorbed.

Seventh application.



Eighth  
application.  
Improvements.

thigh, and on the forty-fourth day, another application was made to the left thigh and leg. There was now more flexibility in the knee and ankle joints than there had been for some years. He went upstairs, taking two steps at a time with each foot.

Ninth  
application.

On the fifty-third day, an application was made to the upper extremities, which produced the usual

Tenth  
application.

discharge. On the fifty-fourth day, the tenth application was made, both thighs and legs being

Black  
discharge.

treated. The discharge from this application created a surprise. The treatment worked well, but not a single yellow pustule could be discovered; every one was blue-black. Here was the toxic pigment of gout, which had been infiltrating every part, thrust out, and constituting the whole of the discharge. There was some swelling of the thighs and pain on motion resulting from this application, which was unnoticeable in any of the former ones. The patient now began to improve rapidly, and the following week walked for hours on a stretch, which he had not done for several years. This prolonged exercise, which produced a sound night's rest, was not followed by the smallest attack of gout or any unpleasant effect. Strength, appetite and activity continued to be on the increase.

Lumbago.

At this time, owing to an exposure to cold, the patient had a transient attack of lumbago. Whether it was of gouty origin or no, could not be determined.

Eleventh  
application.

But an application of the Pyonex was at once made over the lumbar region, which had the effect of allaying the pain in ten or fifteen minutes and facilitating motion.

Owing to unavoidable circumstances, a period of

twenty-one days now elapsed without further treatment. The patient, however, during this interval continued to improve in all respects.

Three weeks' rest.

On the seventy-sixth day, an application was made to the right forearm, and five days later another application was made to the chest, back, and right wrist. The treatment of the case may be said to have been concluded with this last application, as there was only one more application made twelve weeks subsequently.

Twelfth and thirteenth applications.

There are some points of interest which call for remark :—

The urine, which, as stated, had been always cloudy for twenty months, and highly charged with uric acid crystals, became clear after the first Pyonex application to the back and chest, and continued clear and of normal colour permanently. We may apparently conclude from this fact that the presence of the toxins formed by the gout bacillus are directly responsible for the turbidity of the urine, and the presence in it of uric acid crystals. Also that any crystals that may have been formed subsequent to this time, must have been deposited in the tissues, as careful watch was kept and none were afterwards discovered in the urine. But considering the improvements that took place, the weight of evidence would appear to favour the conclusion being arrived at that their further formation had ceased altogether.

Disappearance of urates and crystals.

Conclusions.

The colonies of the gout bacilli were exceedingly well developed, and were expelled with the pus which resulted from Pyonex applications which were made to the thighs and calves. They can be seen clearly

Colonies of bacilli.

with a good magnifying glass, but better with the microscope.

GOUT. CASE I.—REMARKS.

Exercise  
innocuous.

Before the commencement of the treatment, the effort of walking or any other exercise was followed by a fresh attack of gout. But shortly after the date of the first application of the Pyonex, he was able to stand for hours at a time, and walk and play lawn tennis, and in other ways take long-continued exercise without experiencing the smallest inconvenience. He had given up all idea of again using his dogcart, but was soon able to mount and use it with comfort.

Improve-  
ments.

There was a marked increase of strength and power of endurance; also a steady diminution in the size of the swollen joints. There was also a marked improvement in the gait; longer steps and no more swaying of the body.

No recur-  
rence of  
gout.

From the time that he resumed office duties, he was not again troubled by an attack of gout.

Appetite  
and diet.

The appetite improved and became normal, and in a comparatively short time there was no restriction in the diet. Roast beef, mutton and wines, which were formerly rigidly excluded, were again partaken of in fair quantity.

Expression.

There was a considerable improvement in the expression of the countenance; the features having lost their blue cyanosed appearance, and resumed the florid colour of health.

Scalp and  
hair.

The improved state of the blood was further manifested by a healthy condition of the scalp, there being a sudden cessation of dandruff, and the hair,

which had turned grey and was falling off, having resumed its natural colour and become thicker.

If we deduct the intervals during which no treatment was given, it leaves us a total of thirty-eight days, during which the applications were regularly made. The results appear surprising as being accomplished in so short a time.

Duration  
of treat-  
ment.

Six applications in all were made to the right arm. Five were made to the left arm. Five applications were made to the left leg, and four to the right leg; three applications were made to the back and chest; the total number of applications being twenty-three.

Applica-  
tions.

Neither the feet nor hands were treated, as it was not necessary. It is usually sufficient to make applications to the arms and calves in order to reduce the swellings on the fingers, hands, toes and tarsal bones.

Parts not  
treated.

At the time of writing this account, about ten years have elapsed since the treatment of the case as herein described, during which time the patient has never had an attack of gout.

Cure  
permanent.

#### GOUT. CASE 2.—TRANSIENT.

A gentleman, aged 46, while travelling in a Pullman Car, was suddenly attacked with excruciating pain in the sole and great toe of the right foot. The foot commenced to swell, and continued to do so for thirty-six hours, and was an enormous size. On arriving at his destination, he was informed by a physician that he had gout. He gave him a prescription, and ordered perfect rest, saying he would have to keep his room for a fortnight. He, moreover,

History.

warned him that he must expect one or more of such attacks every year, as there was no radical cure for the affection. On the third day after this visit, the Pyonex was applied extensively over the body and the right leg. The swelling, inflammation, and pain disappeared in a few hours, and on the following day he was out and about, as well as ever. His physician on calling again was amazed, on being told that his patient was walking about. Several years have elapsed since this first attack, and the patient has never had a second. One application only was made, and by its means the gout toxins and whatever other morbid elements were lodging in the system, and between them constituted the exciting cause of the attack, were quickly removed in the discharge. The reason for the prompt subsidence of the inflammation was, that the application was made not only to the leg but also to the chest and abdomen. The swollen blood-vessels and capillaries were thus depleted by the sudden revulsion which was produced. The large surface, to which an extra supply of blood was drawn and retained for a considerable time, starved the inflammatory action, and allowed the swelling to subside and the parts to resume their natural condition.

#### GOUT. CASE 3.—COMPLICATED.

History. A lady, aged 76, has suffered for six or seven years from gout, principally in the feet and great toes. Complains of severe stinging pains in the soles and sharp cramps in the muscles of the calves. Neuralgic pains throughout the body, severe dyspepsia



and constipation, can get up and down stairs only with pain and difficulty. Pulse natural.

Treatment was commenced on October 12, 1897, Treatment,  
first. by an application of the Pyonex to both legs, which produced a moderate discharge of pus.

On October 19, both thighs were treated, after Second. which she could walk and get about much better, and had less pain in the feet and toes.

January 3, 1898, a Pyonex application was made Third. to the back. The gout, neuralgia and dyspepsia disappeared. The stinging pains in the feet are scarcely perceptible. Her face, which was thin and sunken, is now full. There is a marked increase of strength and tone, she can go up and down stairs nimbly, and moves about with a quick step.

February 1, the abdomen was treated to relieve Fourth. an attack of dysentery and prolapse.

February 2, both legs were treated. This applica- Fifth. tion completed the cure. The stinging pains in the feet, which had troubled her for sixteen years, completely disappeared, and several months after she reported that her whole constitution was in a normal condition.

### LUMBAGO.

A patient, the Hon. —, age 52, stated that Symptoms. for several years he had suffered from pain in the lumbar region, and was unable to curve the body forwards to the full extent. He was otherwise in good health, and quite active. In order to thoroughly clear the system of any impurities that might be lurking in it, he wished to be treated on the chest and back generally, as well as in the lumbar region.

**Treatment.** The first and second applications were made to the chest, and over the scapulæ respectively. Each resulted in moderate discharge of light coloured pus. Two applications were subsequently made to the lumbar region, each being followed by a free discharge of serum and pus. The lumbar pain totally disappeared, and the body could be curved forwards until the fingers touched the floor.

**Note.** The case serves to show how a little purulent product may lodge in a spot for several years and produce symptoms of pain and stiffness in articulations, and how ordinary measures may prove ineffective to restore the proper motions. Nothing short of the actual withdrawal of the pus cells from the part would result in a free circulation of the blood, and effect resolution. But the moment this was effected, the hindrance to the natural healing powers being removed, resolution was established.

**Neuralgic pain.** A neuralgic pain at times attacks the lower part or lumbar region of the spine. It may be so intense

**Symptoms.** as to cause the patient to fall suddenly in the street and deprive him of the power to raise himself; or it may be such as to curtail his movements to a slow and awkward gait, for which he will need the aid of a walking stick.

**Cause.** These attacks are usually produced by exposure to cold, or by being in a draught during perspiration.

**Remedies.** By the application of hot fomentations and stimulating liniments, the attack will usually pass off in a few days. But when patients are predisposed to the complaint, and there are no means at command by which they can be made proof against it; by the application of the Pyonex over the whole of the

**Predisposition.**

back, especially the lumbar region, an active counter-irritation and warmth are set up, which have a very soothing effect. The severe pain is usually much relieved in a short time after the application of the oil, and the patient is soon able to walk perceptibly better.

### RHEUMATISM.

SYMPTOMS.

ETIOLOGY.

EFFECTS OF THE PYONEX TREATMENT.

SIX CASES.

Attacks of rheumatism are commonly produced by exposure to cold and damp. Owing to the arrest of the eliminative action of the skin, those morbid elements, which should be carried off with the fluids which escape through the pores, are retained in the system, and frequently accumulate in the affected joints. Their presence in the articulation may lead at first to congestion, and later on to partial inflammation of the adjacent tissues. This may be accompanied by stiffness or partial solidification of the synovial membrane. Its function is checked and the joint ceases to be duly lubricated by the synovial fluid, which is no longer secreted.

Etiology.

Stages.

Synovial fluid.

No theoretical reason so far adduced, appears to satisfactorily account for the migratory character of the complaint, as in some cases it travels from one joint to another, without any apparent cause.

Metastasis.

The quickest method of removing slight and recent attacks of rheumatism from a joint is by forcible motion. Patients naturally object to this mode of treatment because of the pain to which it subjects them. But it is, notwithstanding, certain

Treatment.

Forcible motion.

that the painful adhesions may often be thereby permanently broken down if the limb is kept in gentle motion for a reasonable time after the operation, so that afterwards the joint may be moved by the patient without pain.

Symptoms. The shoulder, elbow and knee are the joints most commonly attacked. In acute attacks, there is swelling and redness of the joints. Pain may be caused by the slightest motion, and be so severe that the patient retains the limb as long as possible in a fixed position. In severe cases, the pain and copious acid night sweats prevent sleep. There is thirst, exhaustion and loss of appetite. Acute attacks may last about a fortnight. The heart may be attacked, and pericarditis or endocarditis may be developed.

Remedies. The salicylates, antipyrin, and various modern preparations are of marked service in dispersing acute attacks. But when the disease assumes a chronic form, it may go on for months and years and pass beyond the healing powers of ordinary treatment. A course of Turkish baths will often give much relief for a time, and is frequently resorted to.

Chronic form. There appears to be ample reason why the general methods are not more efficacious in providing satisfactory relief, more especially in the chronic form of the affection, when we consider the morbid state into which the system is brought by the exciting cause.

Micrococcus rheumaticus. The micrococcus rheumaticus, which appears to be responsible for the affection, has the faculty of secreting formic and other acids in such quantity that it can be discovered in the various tissues. These acids, of which formic is by far the more abundant, are poured out freely on the fibrous,

Formic acid.

cartilaginous and other tissues which enter into the formation of the joints. As the passage of the micrococci, which are borne by the arterial stream, is checked when they come into contact with the impermeable fibrous tissue, they naturally collect in these localities in large numbers; the pathogenic toxins which are continuously formed by them become absorbed by the joint tissues, and a rheumatic condition of the joint is the result.

Toxins.

We are not aware of the varieties of micrococci that produce rheumatism. But that there are manifold kinds there appears to be no doubt.

Varieties of bacterium.

When we consider the different symptoms that are manifested in acute and chronic rheumatism, we find that there is but one satisfactory conclusion to be drawn, concerning their exciting cause.

In one case, the apartment of the invalid is filled with a strong sour smell, which has been attributed to the presence of lactic acid. This kind of rheumatism is comparatively rare, but we may say, without hesitation, that the micrococcus herein concerned must be of a different type to that which produces ordinary rheumatism. If we take another example, *e.g.*, rheumatoid arthritis and rheumatic arthritis; the symptoms of these two varieties of the rheumatic diathesis are sufficiently distinctive for us to discover that there must be a difference in the exciting cause. The micrococcus is the exciting cause, and hence we conclude that there must be different varieties of the micrococcus rheumaticus.

Rheumatoid arthritis.

Again, when rheumatism is distinctly associated with gout, as, for instance, in rheumatoid arthritis, when the prevailing symptoms are those of rheu-



matism, but the frequent presence of uric acid crystals in the voided water, coupled with other circumstances, leaves us in no doubt as to the presence of gout ; the reasonable conclusion appears to be that both the micrococcus of rheumatism and bacillus of gout are present in the system.

Secretion  
of toxins.

To return to our subject : The unceasing secretion of acids and other toxins, which is carried on by the rheumatic bacterium in severe cases of rheumatism, is such that ordinary methods have not the power to check it or to prevent its ravages.

Pyonex  
Treatment.

It will now be a matter of interest for us to take a glance at the various effects which are produced by the Pyonex Treatment, when employed in acute and subacute cases of rheumatism.

#### EFFECTS OF THE PYONEX TREATMENT.

The effects of the Pyonex Treatment in troublesome cases of rheumatism are of a most helpful nature.

Pain.

Our first object in every case is, if possible, to relieve the severe pain. As it so often happens that the pain which is caused by the movement of the joint is the main trouble, when this is relieved the patient regains health. But when there is a fixed pain while the parts are at rest, the condition of the case may require to be otherwise dealt with. The pain, with rare exceptions, can be relieved in a short time by the application of the Pyonex. The results in this respect are sometimes surprising beyond degree. Although it may have existed for years, so great is the revulsion produced by the treatment that frequently in twenty or thirty minutes

no more sensations of a painful nature can be felt, and the freedom from suffering is permanent. But practically in all cases, when the treatment is followed up for a comparatively short time, the pain is removed. If after a lapse of days or weeks it returns, a repetition of the application is effectual in relieving it. By this process of combating it, it may be completely overcome.

*Stiff Joints.*—When joints are stiff, but not swollen, motion is commonly restored as soon as the pain is removed; but when the stiffness persists it will show some increase of motion after each application, and by degrees full extension and flexion are restored. Stiff joints.

When joints are swollen; in acute cases the swelling rapidly diminishes if the treatment is applied in the vicinity of the joint. But in chronic cases, the applications have to be kept up for a considerable time. The effect of each application is to expel a quantity of pus, formic acid and other toxins from the tissues which are laden with these impurities; and after each successive crop is thrust out, the size of the swollen joint is reduced. By following up the applications the reduction of the swollen heads of the shafts is also procured. Swollen joints.  
Reduction.

*Contracted Tendons.*—This heading is in reality a misnomer. When limbs are flexed, owing to rheumatic complaints, the shortening of the tendon is practically *nil*. The contraction really takes place in the body of the muscle. When muscular tissue is subjected to purulent infiltration, the general effect is to cause a certain degree of atrophy. The volume of the muscle decreases in length and breadth, and Muscular contraction

Arrested.

as the degree of infiltration increases, so does the contraction of the muscular fibre. This contraction is immediately arrested by the application of the Pyonex. The first expulsion of pustules serves to loosen the fibrillæ, and makes a perceptible increase in the amount of extension. Every succeeding application increases these effects until the natural length and elasticity of the muscle are reinstated, and extension is restored.

Muscular  
emacia-  
tion.

In long-standing cases of a subacute character, as well as others which are somewhat acute and of less duration, the muscular system at times presents a most withered aspect. The chest and back, as also the upper and lower extremities, have the appearance of starvation. It is interesting to witness the wonderful change which takes place in these cases on the application of the Pyonex. On the expulsion of the pus and bacterial toxins, which are so inimical to the normal condition of health, a wonderful activity is set up in the vascular system. The arteries and veins rapidly multiply and increase in calibre, and new muscle is formed at a surprising rate. This reproduction is promoted or checked precisely as the Pyonex applications are continued or stopped. It always happens that the part that is most often treated has stouter layers of muscles than any other part. Muscular emaciation may in this way always be overcome.

Effects of  
toxin  
expulsion.

Pericarditis  
and endo-  
carditis.

When symptoms supervene which indicate that the pericardium and endocardium are in a partially inflamed state, owing to bacterial toxins, an improvement rapidly sets in when Pyonex applications are made alternately to the back and chest. Although

the toxins in this case are so deep-seated, the benefit of their expulsion is quickly felt and the distressing symptoms wane.

A FEW CASES OF RHEUMATISM ARE SUBJOINED WITH A VIEW TO SHOW THE IMMEDIATE EFFECTS OF THE PYONEX, WHEN APPLIED UNDER VARYING CIRCUMSTANCES.

#### RHEUMATISM. CASE I.

A Frenchman, aged 51, suffered from rheumatism Symptoms.  
in the feet for nine years. It was so severe that for about four months in each year he was compelled to remain in his house. The pain was so acute that during much of this time he was unable to go from one room to another, even with the aid of crutches. At times he would make a determined venture to move about a little, but the subsequent pain it gave him always made him repent.

He had long ago given up medical treatment, and was only induced to consult me because of the importunity of one of his own nationality whom I had relieved of chronic rheumatism of the elbow joint.

Treatment was commenced by the application Treatment,  
first.  
of the Pyonex to the thighs and legs. A discharge of pus resulted over the whole of the surface treated. In a few days there was a great improvement, and he was able to dispense with his two walking sticks and the servant who usually accompanied him.

After a second application the pain completely Second.  
disappeared. Years afterwards, he called and stated that he had never experienced the smallest return

of the pain, the morbid element which caused it having been totally expelled from the system. Such results with only two applications are not commonly attained.

## RHEUMATISM. CASE 2.

Symptoms.      The wife of a policeman, aged 28, during the  
Ten years.      whole of her married life of ten years was a confirmed invalid, suffering from neuralgia and rheumatism in all her joints. For nine months at a time she was confined to her bed as helpless as a child and unable to move. During successive nights she would not close her eyes in sleep, and would be in an apparent trance of suffering. For weeks she would take little or no nourishment, and was reduced almost to a skeleton.

Treatment.      She had been in bed for months when the Pyonex Treatment was commenced by an application on the chest and back. Only an hour had elapsed before she felt relief from the pain and returning strength to her limbs. She got out of bed and walked to an adjoining room. Her constant moanings ceased and the pains returned no more. Day by day she gained strength and her appetite returned. In four weeks she was able to resume her household duties, and from that time continued in good health.

## RHEUMATISM. CASE 3.

Symptoms.      A young married man, a bricklayer, aged 26,  
Eighteen      had been laid up with rheumatism for eighteen  
months.      months, during the whole of which time he had not left his bed. He suffered severe pains in all his joints, and was unable to move his limbs.



There was a complete absence of inflammation, and the treatment was commenced by a vigorous application to the back, chest, upper and lower extremities. The effect was almost miraculous. As each part was covered by the treatment the pain in the adjacent joint disappeared, and on the conclusion of the application, he was able to move all his joints without pain. He expressed a desire to get up, and asked his wife to bring him his clothes. She trembled with emotion while helping him to dress. He left his house about half an hour after receiving the treatment, and went out into the warm sun, and walked a distance of three miles, alternately walking and running, overjoyed at his cure. His natural strength quickly returned, and ten days afterwards, he commenced working at his trade. He had no relapse, the one application having sufficed to restore him to perfect health.

Treatment.

Miraculous effect.

Three miles.

## RHEUMATISM IN THE FEET. CASE 4.

A patient, aged 21, stated that three years ago, he was attacked by rheumatism in both feet. It came on gradually, and was induced by standing day by day on cold and wet stone floors, while he was engaged in developing photographs.

History.

The pain commenced in the heels and afterwards extended through the soles of the feet to the toes. It has been so severe that he has been unable to leave his bed for a period of two months at a time. While in bed he was unable to move, and had to be lifted in and out by attendants. At the commencement of the attack, the feet, ankles and toes were considerably swollen. The swelling par-

Symptoms.

Two months in bed.

Swelling.

tially diminished, but the feet never resumed their natural size. He has never been able to walk properly, or for any considerable distance, during the three years he has been afflicted. He visited the Matlock Baths in Derbyshire, and remained under treatment for two months, but received no benefit.

**Treatment.** The Pyonex was applied to both legs below the knees. A moderate quantity of pus was discharged, and on the third day the calves were a little swollen.

**Resolution.** Within a week the swelling went down, and all the pain in the feet completely disappeared. He was able to walk naturally, run and jump.

#### ACUTE RHEUMATISM. CASE 5.

**History and symptoms.** A patient, aged 75, tall and thin. Owing to exposure to cold, he contracted a sharp attack of rheumatism, which compelled him to keep his bed for four weeks. The wrists were almost immovable ;

**Pain.** there was very little motion in the neck. The pain was especially severe in the neck and lumbar region.

The whole of the spine was in constant pain, especially at the nucha. The body was much wasted, and his strength, which had been greatly reduced by pain and continuous acid perspiration, was rapidly waning. A strong acid odour filled the room. The pulse was weak, and he had no appetite. The attendant physician feared that he might not long survive.

**Treatment.** The Pyonex was applied to the neck, back and arms. Within thirty minutes every pain vanished. On being directed to get out of bed, he did so at once, and walked about his room, then downstairs

and into his parlour, where he remained comfortably seated for the rest of the day.

On the third day after the application there was a copious discharge of large whitish pustules around the neck and wrists, which in many places had become confluent, forming sacs of purulent matter. Discharge.

There was already considerable motion in the wrists. His appetite had returned so that he enjoyed his meals. The perspiration had ceased and he was rapidly regaining strength. In less than a fortnight afterwards he walked about his farm for an hour and a half without resting, and stated that he needed no further medical aid. One application sufficed to effect a cure. Motion.  
  
One application.

#### CHRONIC RHEUMATISM. CASE 6.

A patient, aged 29, spinster. Thick-set, well-built and strong frame, and good colour; was attacked by rheumatism in the feet a little over three years ago. It was caused by her getting out of bed and standing on a stone floor, with uncovered feet, while waiting on her invalid mother. History.

In from three to four months the severe pains which first attacked the feet passed upwards and attacked the knees and hips, and afterwards extended to the spine, shoulders, elbows and fingers. The toes and ankles were also invaded. The patient was in a terrible condition, all the joints being swollen and in constant pain. The pain was most severe in the right shoulder, which was too tender to be touched. The finger joints were very swollen and painful, so that the fingers always remained fully extended; she was unable to make any use of them, Symptoms.  
  
All the joints swollen.

or even to move them. The muscles of the calves were rigidly contracted, and the feet were drawn up so as to keep the legs at an angle of about 90° with the thighs. Any attempt at extension was attended by severe pain.

The pain, swelling of the joints and general distress of the patient increased from year to year.

Pro-  
nounced  
incurable.

After seven weeks' residence in a hospital in Bath her case was pronounced incurable.

After eleven weeks' residence in an infirmary the same sentence was pronounced, and several physicians elsewhere had said they could do nothing for her.

Treatment.

*Treatment.*—A trial was now determined on with the Pyonex, with a view to discover if any benefit would result.

First  
application.

An application was first made to the thighs and legs. As it was desirable to produce a strong counter-irritation, the perforations were made deeper than usual, and close to each other. The purulent discharge which resulted was of light colour, and decidedly small in quantity. The pain in the knees and feet ceased during the process of application, and up to the third day after there had been no return whatever. The legs could now be extended a little, without causing so much pain.

Second  
application.

On the fourth day a second application was made. Both arms and shoulders were well covered by the perforations. The pain in the right shoulder, which was the most severe of all, disappeared during the application. The night subsequent to the application she lay on it for hours at a time, which she had not been able to do for many months previously.

The swelling disappeared from all the fingers,

and there has been no recurrence of the pain ; she is able to open and close her hands rapidly, and has power to grasp articles.

On the ninth day a second application was made to both legs and thighs. The discharge was of the same scanty nature, but the legs could be extended still more. The arms and hands were regaining strength. Third application.

There was now an unavoidable delay in the continuation of the treatment for nearly a month.

On the thirty-fifth day a second application was made to the arms and shoulders. During the interval of twenty-six days, there were some returns of pain, but it was not of the severe character of the previous suffering. The increase in power and motion in the hands and legs remained about the same. Fourth application.

On the forty-eighth day, another application was made to the thighs and legs. She has now but little pain anywhere. She is able to lift her legs from the bed, and they are capable of still further extension. There is more motion in the arms and fingers. She is able to use her hands for many purposes, and can sit up in bed and take her meals. Fifth application.

In consequence of the author's leaving the neighbourhood, he saw no more of the patient after this date.

There are some interesting points connected with the treatment of the foregoing cases, especially the second, third, and fifth. Remarks.

When in cases of a rheumatic diathesis, there exists a certain amount of swelling of the bone or cartilages, the process of therapy can only be carried on by repeated applications, a reasonable time being allowed



for the absorption of the swelling, and reduction of the parts to their natural size.

Pain  
without  
swelling.

But when there is no kind of disorganisation or adhesion of the articulating surfaces, the only reason for the inability to move the part, is the pain which is caused by the motion. Therefore it appears only reasonable to come to the conclusion that if our efforts to remove the pain are crowned with success, there is no further obstruction to the articulation in resuming its natural function.

Various  
effects pro-  
duced by  
treatment.

When we are acquainted with the manifold effects which may be produced by the various methods that may be adopted in the application of the Pyonex, we are frequently able to undertake the treatment of such cases as cited, with every hope of success.

Degrees of  
warmth,  
&c., pro-  
duced.

The kind, as well as the degree, of counter-irritation, which may be produced by the application of the instrument, somewhat differentiates from that which is effected by the methods which are commonly in use. The nervous peripheræ are laid bare, by the rapid creation of artificial pores, and the stimulating oil is immediately applied to them. This creates a decided glow in the part. However low the temperature of the locality may have been, a genial warmth of a pleasant character is now produced.

#### RHEUMATISM—REMARKS.

Multiplying  
the perfora-  
tions.

If, for instance, say, ten perforations are made in proximity to the joint that we are endeavouring to relieve, and we afterwards discover that the warmth and reaction which are produced in the limb, are insufficient for the accomplishment of the end which we have in view, we may make twenty perforations,

and thereby double the warmth and counter-irritant effect. If we make forty perforations the effect will be four fold, and so on.

The deeper the pain is seated, as may happen, for example, in the shoulder joint, when it is thickly covered by muscular tissue, and the more stubborn it is to dislodge, as in the ankle joint, the closer we make the perforations, until the degree of counter-irritation and caloric which is produced by the treatment, reach to such a point as will, by a metastatic process, accomplish our object.

Increasing  
the caloric,  
&c.

**RHEUMATOID ARTHRITIS.**

This inflammatory affection of the joints is popularly known as rheumatic gout; but it has marked characteristics, which differ from gout or rheumatism.

**Symptoms.** Its effects are most distinctive and crippling, and as regards ordinary treatment it is the most intractable and obstinate of any known affection. It is a disease of debility, generally attacking weak and delicate patients; but it occasionally attacks well-built and strong individuals. It is more frequently met with in women than men, and in persons whose constitutions have been run down by overwork, severe strains, or deprivations.

**Begins.** It usually begins in the smaller and most used joints, which become swollen and often infiltrated with serum, which later on is absorbed. By degrees it extends, until it invades the larger joints. Its progress is usually slow, and it gradually brings the whole frame under its power, until every joint is affected.

**Pain.** The affected joints are very painful, the pain being much increased on motion in the earlier stages; but as the disease advances they become rigid.

**Worst forms.** In its worst forms the neck and jaws become fixed, the mouth cannot be opened. The limbs and joints are distorted, the trunk is curved forwards and rigid; the muscles are so wasted that the body is reduced almost to a skeleton. The patient is unable to move, and in a state of utter helplessness and misery.

**Wrists.** When there is a predisposition to the disease in young persons, as, for instance, in the case of young ladies who are devoted to lawn-tennis, the wrist is

first attacked, and as soon as it becomes painful the bat is transferred to the other hand, and the second wrist quickly gives way. With cooks who are constantly lifting saucepans, the leverage on the wrists is severe, and they are first invaded. In the case of the seamstress and typewriter, the fingers are first attacked. Where the occupation involves constant standing, the pain and swelling usually begins in the toes, and then passes to the heels. The index finger, owing to its most frequent use, is perhaps the most frequently attacked. The fusiform swelling of this, and the other finger-joints, accompanied by effusion, and the ulnar deflection of the arms and fingers, are characteristic symptoms of the disease. There is also effusion of serum in the joints of the knees and ankles. The knees, ankles, wrists, carpus, tarsus, hips and jaw, may all be invaded and fixed. When the jaw is attacked, this symptom alone suffices to decide the case to be one of rheumatoid arthritis, as it is similarly affected by no other disease.

In men the lower extremities are more frequently attacked, while in women the upper extremities are commonly invaded. The subjects may be anæmic and emaciated. Constipation is a common symptom, also periodic perspirations; and a persistent perspiration in the palms of the hands and dorsum of the feet, which has a slightly acid reaction, and may cause much irritation.

As the disease becomes more established, the pulse may become very frequent and hard, at times mounting up to as high as 150°. There is often extreme mental depression, accompanied by a great general oppression; even men give way to tears, and

Toes.

Index  
finger.Fusiform  
swelling.Ulnar  
deflection.

Effusion.

The jaws.

In men.

In women.

Perspira-  
tion.

Pulse.

Atrophy. wish themselves dead. The stomach is upset, and there is a sensation of sickness, especially after taking food. Every part of the system wastes; the limbs are gradually reduced to the size of umbrellas. The metacarpal bones become prominent owing to the absorption of the inter-osseous muscles.

Pain. Pain is often a marked symptom, especially when the affected parts are moved. It is so severe at times as to make patients walk the floor the whole of the night. It comes on in paroxysms, lasting it may be for several hours, after which it ceases, and allows the patient to rest.

Absorption. In some cases the patients lose scarcely any weight, the body remaining in good condition, and the face of florid colour. But the marked feature of the disease in the vast majority of cases, is the gradual absorption of the soft parts. The absorption is usually first observed in the upper and lower extremities, commencing in the fingers and toes, and extending to the calves and arms, and later on to the neck and trunk. The wasting goes on gradually, until the covering of the bones is reduced to scarcely more than the integument. The calibre of the arteries and veins becomes reduced, so that no pulse is perceptible at the wrists, and the beating in the radial artery can only be detected several inches up the arm.

Arteries. If we carefully trace the history of the disease, we find that one of its marked features is the suppression of the secretion of the synovial fluid of the affected joints. The synovial membrane in advanced cases may be invaded by villous or polypoid out-growths, which are termed hypertrophied synovial villi or dendritic vegetations. It gradually becomes disorganised

Suppression of synovial fluid.

Villi.



and its function is destroyed. As soon as the secretion of synovia is totally arrested, the joint ceases to be lubricated; and thereupon follows a course of events that might naturally be expected. The articular cartilages soon wear away or become absorbed, and the bony surfaces come into actual contact and become burnished by friction. There being no longer any lubrication, or power of reproduction, the friction wears out the opposing surfaces, and the heads of the bones gradually disappear. The ligaments are thickened, and small plates of bone or cartilage may be formed in them. The tendons in the immediate proximity of the affected joints may be absorbed. A new growth, consisting of bony or cartilaginous nodosities, appears around the margin of the articulation.

Cartilages consumed.

Bones.

Ligaments.

Tendons.

The uric acid diathesis, or chalky formation of gout, are altogether wanting. There is also an absence of the formation of the characteristic sour-smelling acids, and the exceedingly painful and inflammatory nature of ordinary rheumatism.

No uric acid or chalk.

### PROGNOSIS.

Rheumatoid arthritis has always been regarded as a hopeless disease, so far as relates to ultimate recovery. Medicines without number, massage, mineral baths, electricity, and a host of other remedies have been carefully experimented with, but they neither eradicate the disease from the system, nor stop its progress. The disease pursues its course, regardless of every ordinary method of treatment. In some isolated cases an improvement appears to have been effected by certain lines of treatment. But they are not sufficiently established to enable us to

Prognosis.

Ordinary methods.

recommend them as being likely to alleviate the general sufferer.

Pyonex  
Treatment.

But in forming a prognosis, when the affection is brought under the Pyonex Treatment, the results are such as to give us much encouragement for expecting an amelioration of the symptoms, and a return of the patient to comparative, or perfect health. If the Pyonex Treatment be adopted when the disease is not far advanced, the improvement is usually marked, and there is every hope of resolution. Improving symptoms are discernible very early in the treatment, and continue without interruption, except in the case of accidents.

In earlier  
stages.

At this stage of the disease, there are no serious symptoms to contend with. The pains can soon be relieved, and the joints be restored to proper action. The acid toxins exist in comparatively small quantity, and every discharge of purulent matter is followed by some marked relief of pain, and perceptible increase of motion and power. The appetite improves, the nights are restful, the weight increases, and the progress is somewhat rapid. There are no swollen joints to be reduced, and there is but a small contraction of the muscles, and in order to effect a cure there is comparatively little trouble to be overcome. Another important feature is that the patient's recuperative powers are not reduced to a low degree, and the system readily answers to the measures which are taken. The expulsive action of the treatment has not so much to accomplish, as there is less pus in the system. There is consequently a smaller amount of purulent matter thrown out after each application of the Pyonex instrument. All cases when taken in

Recupera-  
tive powers.

hand at their inception, and fairly dealt with, have the best chances of an early alleviation.

When the affection has passed to a more advanced stage, and the toxins have invaded every part, the joints are fixed and the frame is much atrophied, and there is no power to walk or stand, and the symptoms are weekly becoming more serious—still the prognosis is favourable if the case has all the attention it requires. But as there is much more to be accomplished, and much less strength at command, rapid progress cannot be attained. Every part of the frame has to be repeatedly treated, and as the vital powers are much reduced, only small applications can be made. In these cases, there are sure to happen frequent interruptions to the applications, which are mostly of an accidental nature. Their effect is to prolong the duration of the treatment, but not to frustrate it, as a favourable termination may reasonably be expected.

Second stage.

When the disease has advanced yet another stage, and disorganisation has actually commenced in the joints, the grating sound that is heard only too plainly shows us that the articular cartilages are consumed, and the bony surfaces are in actual contact. Even then, if there be a fair quantum of strength remaining to the patient, new growths of healthy cartilage may take place, and the joint be restored to a useful condition. The other symptoms pertaining to this stage steadily improve, while these renovations are in progress, and step by step is made towards resolution.

Third stage.

When the symptoms are still more chronic, and of a severe character, the proper course to be taken is to make a few applications with the Pyonex and

Fourth stage.

judge by their effect how far a continuation of the treatment would be advisable. The pain may be relieved, and life may be prolonged under more endurable conditions.

### ETIOLOGY.

Etiology.

An allusion may be made to the causation of this ailment, before we pass on to the consideration of the treatment, &c. Apart from its being an important scientific question, to arrive at something like a reasonable conclusion on this point, there is also involved herein, an elucidation pertaining to the healing or alleviation of the disease, through the instrumentality of the Pyonex Treatment.

Micro-coccus.

*British Medical Journal*,  
January,  
31, and  
September,  
19, 1903.

It has been discovered by Triboulet that a micro-coccus is responsible for rheumatic ailments. Also, owing to the additional experimental proofs which have been made by Beaton, Walker, Ryffel, and others, the *Micrococcus rheumaticus*, with its formic acid toxin, will be regarded as an established fact. This discovery is a most interesting fact, and comes in to throw light upon the progress of these affections in the system. It also serves as a beacon-light for a guidance in its successful treatment.

Former theories untenable.

None of the suggestions as to the cause of rheumatoid arthritis, which have been advanced from time to time, have been received with favour, the arguments in their support having been considered insufficient, and having but little basis of proof. But if we conclude that the ailment is produced by a microbic toxin, we are able to account for the morbid changes that are produced, during the progress of the disease, in a natural and satisfactory manner. For

Microbe theory satisfactory.

example, the acid perspiration, the swollen bones, the wasted muscles, the disorganised ligaments, articular cartilages, and synovial membranes, the wasted arteries and fixed joints,—can all be well understood and accounted for in a rational manner, on the assumption that a toxin is the exciting cause.

When bacteria acquire a habitat in the human system, the effects of their presence are analogous to those of plants which grow in the natural soil. As the varieties of the latter are legion, so are bacteria, their number or classification being impossible to arrive at. Bacteria theory.

As ordinary plants produce all kinds of juices or fruits, some innocent, others poisonous, while others yield various kinds of chemicals; so some bacteria are harmless, while others generate toxins of a virulent character, as well as acids and alkalies. Then, again, the blossoms of plants are of all colours, and in like manner the toxins formed by micro-organisms are of all the colours of the rainbow. These toxin pigments are of many hues and shades, and some are known to be laden with the virus that constitutes the exciting cause of disease. Bacteria compared to plants.  
Colours.  
Pigments.

As there are some plants which emit poisonous gases, and others which yield solvents; others emit phosphorescent hues, while others yield combinations of nitric and nitrous acids; others again are found to cause fermentation of sugar, and various other chemical changes; in like manner do we find that there are toxins which are formed by the various kinds of micro-organisms which effect all these, and many other remarkable changes. Gases.  
Acids.  
Ferments.

Although the study of micro-organisms, as regards



New  
science.

their pathological influence, is a science that may be said to be as yet in its infancy, yet the knowledge that has already been acquired on the subject, is such as to acquaint us with the fact that phenomenal powers are possessed by many of them; and enable us to make deductions, and to come to reasonable conclusions, as to the cause of certain effects that we discover, and which so far are not referable to an actual visible agency.

Toxin  
theory.

The micro-  
cocci.

The toxin.

Its invasion  
of the soft  
tissues.

Bone  
tissues.

In the case of rheumatism and rheumatoid arthritis, there appears to be no reasonable ground to doubt that the structural changes which take place in both, and more especially in the latter, are due to a destructive toxin, which is secreted by a micro-organism. The progressive character of the disease is, no doubt, due to the continuous increase of this toxin in the system. The micrococci which are carried to every part of the system by the circulation of the blood, are not able to pass through the dense fibrous tissues which form the ligaments of the joints. Hence large numbers are brought to a stop at these points, and an active secretion of toxin takes place. This formic acid toxin does not cease to be poured on the ligaments, the articular cartilages and the heads of the bones which form the joints. Owing to its toxic and acid quality, a subacute inflammation is set up, which is followed by swelling, and accompanied by pain. With longer time the soft parts become soaked with the virulent acid, and by a slow process, disintegration is induced. The softer tissues are naturally the first to yield, and after they become disorganised, the harder bony tissue which has become swollen, and is no longer protected by its fibrous and cartilaginous cover-

ings, begins to disintegrate. This course of disintegration is further facilitated by the cessation of the regular supply of blood to the heads and shafts, owing to the atrophy of their corresponding arteries, and further by the discontinuation of the supply of synovia. The muscles and tendons, also, are gradually invaded by the acid, and owing to its toxic nature, and the atrophic process which is induced in their arteries and veins, they contract, and cause to approximate to each other the shafts of the long bones in which they are inserted. The whole of the muscular system is similarly affected.

Muscles,  
&c.,  
invaded.

Parts which are affected in a less severe degree are: The stomach, resulting in the accompanying dyspepsia; the liver, rendering its action torpid; the intestines, producing the constipation which is so constant, and the lungs, which are so often thereby rendered bronchitic.

Parts less  
affected.

There is an analogy between the effect produced by the toxin of the tetanus bacillus and the rheumatic toxin. The tetanus toxin being of a particularly virulent nature, the maxillary muscles which it specially attacks are caused to contract rapidly, and with such firmness, that no leverage that could be safely applied would avail to separate the jaws. The rheumatic toxin also invades the same muscles, but being of a less virulent nature, it takes longer to effect the same result. Time is required for the muscles to become sufficiently steeped for their contraction to be effected. But when the stage of invasion is complete the results are similar in each case, the jaws being firmly closed. The comparative immunity of some of the softer tissues would naturally be owing to the freer circula-

Analogy  
with  
Tetanus  
bacillus.

Immunity  
of soft  
tissues.

tion through their blood vessels, and the total absence of any compact or hard tissue, which would prevent the ready passage of the micrococci. The brain tissue not being attacked, appears to be an unsuitable soil for the multiplication of the microbe, and another circumstance which would favour its immunity is its occupying the highest point of the human frame. In rheumatic ailments, as well as in gout, the tendency of the toxins, and especially the bacteria which are responsible for these affections, is to gravitate to the lower parts, so that in the great majority of patients who are attacked by these diseases, the lower extremities are primarily invaded. In gout especially, the well-formed colonies of the gout bacillus are most abundant in the muscles of the calves, and the same may be said, in a marked degree, of the toxins and pigments which are secreted by them.

The elucidation afforded by these facts, to the healing of these affections by the Pyonex Treatment, consists in the evidence of the ready relief to their urgent symptoms, which is attained by the expulsion of these micrococci and their toxins from the system. As, on the one hand, no improvement could take place if the exciting cause remained intact in the blood and tissues, so, on the other, the fact of the alleviation of the ailment serves as a proof that it has been expelled, and that its baneful influence no longer promotes the disease.

#### EFFECTS OF THE PYONEX TREATMENT.

In the treatment of rheumatoid arthritis by the Pyonex, many remarkable improvements take place. The healing powers of the system are made prominent

in an extraordinary manner after the removal of the toxin-laden pus from the invaded parts has been effected. The restoration of the diseased parts is at times quite beyond anything that could be hoped for.

*Pain.*—The first applications of the instrument are Pain. always made with a view to relieve the fixed pains ; and all through the treatment, whatever special part may be occupying attention with a view to its recovery, it is an invariable rule to leave it for the moment, and direct every effort to the relief of any pain that may supervene. The relief of these pains Its relief. in the vast majority of cases is by no means a difficult matter. Although in some cases they are exceedingly stubborn, and of frequent recurrence, often owing to incautious exposure and other causes, yet we may ordinarily expect to assuage them with one or two applications, and then have our hands free to take up the cure of the parts that are most in need of attention.

When the knees or feet are so affected as to Treatment.  
Knees and  
feet. prevent the patient's walking or standing, it is usual to begin their treatment by making an application on the calves, and to make the applications with more frequency on the lower extremities than elsewhere, it being most important for the patient to be able to walk, or at least stand.

In almost every case the same part can be treated Repetitions. again in ten days. The new epidermis that forms is sufficiently hard to bear the repetition in this time. But as the instrument is not re-applied to the same spots, but on the spaces between them, the new epidermis has in reality twenty days for maturing instead of ten. In rare cases the second application

may be applied to the same part in four days, but usually from six to ten days are necessary.

Effects. The applications on the lower extremities, *i.e.*, the calves and tibialis anticus, will serve primarily to diminish the pain and swelling in the toes, ankles and knee joints. And secondarily will drain from the whole of the trunk a certain quantity of virus, so that the patient, in addition to realising decided relief from the pain, is almost sure to express himself as feeling better generally. The feeling of despondency, loss of hope and intense depression, which are often marked symptoms, quickly vanish and are replaced by cheeriness and a renewed interest in things in general, and the broken spirits yield to new hope.

Joints. *Joints.*—The whole of the bony tissue forming the joints is often so swollen that the natural form of the joint is almost destroyed. The usual protuberances cannot be discovered. This occurs to a marked extent in the ankles and knee joints. A decided improvement may be looked for in these parts. As the expulsion of the virus proceeds, the swollen heads begin to diminish in size, and by degrees the natural form of the joint is resumed. Also the adventitious tissues which form around the joint and contribute to its bulky and unnatural form, become completely absorbed.

Articulat-  
ing  
surfaces.

When there is extreme tenderness in the articulating surfaces, so that the limb cannot be moved without causing pain ; this is usually due to the partial absorption of the interosseous cartilages, and on carefully listening, a crepitus can be detected when the joint is moved, which is caused by the heads of the bones, already bare, and deprived of their cartilaginous cover-

Crepitus.



ing, grating against each other. As the treatment is continued this crepitus gradually disappears, and not the smallest grating sound can be discovered, while at the same time, the extreme tenderness is relieved, and the limbs can be moved without causing pain. These changes go to prove that the bare surfaces of bone are again protected, and covered by a new growth of cartilage which is effectively lubricated by the natural secretion of synovial fluid. Even when the knee joints are so affected as to produce a loud crunching noise on bending the limb, and when the power to raise the foot from the floor, during a sitting posture, is totally lost, still the healing process may be so established that the recovered parts will again bear the weight of the body, and the lost power may be regained, so as to enable the patient to raise his feet from the ground, or rise from his chair and bring the whole of his weight on either foot.

Restoration  
of carti-  
lages.

*The Progress of the Disease.*—This may be said to be governed by absolutely no law. It may be rapid, and quickly bring the whole system under its baneful influence, invading every joint, absorbing every soft tissue, and hurry its victim to an untimely end. At other times it is very slow, taking years to pass from stage to stage, and giving scarcely any pain; or it may remain quite stationary for an indefinite time, showing no disposition either to disappear, or make further encroachments in the system. At times it attacks only the finger joints, which remain swollen and somewhat painful for years.

Progress of  
disease.

Those cases which have a tendency to make rapid advances and invade the whole system, and are not of such a chronic nature as those of longer standing,

Cases.

Rapid progress. are generally the more amenable to treatment. The pus is thrown out rapidly, and the improvement is consequently perceptible in a marked degree from week to week.

Slow progress. When the vital powers are not at a low ebb the system usually answers to the treatment readily. But even when there is great weakness combined with a total invasion of the system, the improvement will still be manifest, but naturally a longer time is required for the desired changes to be effected. Even in cases of twenty-five, thirty, and forty years' duration, which, at first sight, do not present the smallest ray of hope, the treatment, when steadily persevered with, soon begins to produce signs of improvement, which steadily continue to be manifested as long as the treatment is kept up.

In very severe cases. There is one result which is always looked for while the applications are being made, and must be taken as evidence of the carrying out of the grand end in view, and this is, the constant expulsion of the pus. This pus, without doubt, contains *the actual exciting cause of the disease*, and while the store of this, which is infiltrating the whole system, including the bones and soft tissues, is week by week being diminished, there will be a corresponding improvement in the whole frame.

Pus expulsion, all-important. When the applications have, owing to the force of circumstances, to be applied only over a very small surface, and only six or eight perforations can be made at a time ; the expulsion of pus is, of necessity, correspondingly small, and the rate of improvement slow. But still in such cases there is a perceptible amelioration in the symptoms, and the facts must not

Small expulsion.

Effects.

be overlooked that the disease is being arrested in its progress, and life is being prolonged. The wearing pains are being relieved as well as the seasons of intense depression, and the time is passed in comparative comfort.

While special attention is given to the restoration of the feet and lower extremities, an occasional application is made to the chest, abdomen, and back. These parts respond well to the first two or three applications by yielding a free discharge of pus.

Abdomen  
and back.

The chest application, in addition to benefiting the patient as regards the disease, will remove any cough or bronchitic symptoms that may be lurking in the tubes, while the abdominal application will greatly tend to improve the condition of the intestines, and lessen the tendency to the constipation, which is such a general concomitant of the disease.

Chest  
application.

Abdominal.

Constipa-  
tion.

The application on the back is sometimes of importance. Its immediate effects are to relieve the pain which so often exists under the shoulder blades, and in the shoulder joints; and in cases where the jaw is closing, or is so nearly closed as to preclude the possibility of mastication or the administration of solid food, these serious symptoms are quickly relieved. The masseter muscles are relaxed, the mouth can be opened, and food of a solid nature can be taken. In addition to this, the aching pain which is so common in the temporo-maxillary articulation is greatly relieved, and later on disappears. Also the spinal pain, which extends from the nucha to the lumbar vertebræ, is relieved.

Back  
important.

Effects.

Masseters.

Pains.

*Reproductive Powers.*—The resuscitation of the reproductive powers is a marked and interesting fea-

Reproduc-  
tive powers  
resus-  
citated.

ture, in the treatment of this disease by the Pyonex. On whatever part the instrument is applied a decided impetus is conveyed to the circulation. The arteries and veins soon show a wonderful activity, the part becomes very vascular, and new tissues soon commence to appear in the place of those which have been absorbed. As in this disease the wasting and disappearance of the muscular tissues especially is a marked symptom, and usually continues uninterruptedly *pari passu* with the progress of the disease ; it is very interesting to watch the stages by which a bone, which is covered by little else than integument, gradually becomes covered by all its former natural tissues. The larger the number of applications which is made to the part, the more rapid is the reproduction of the new tissues. These new tissues form rapidly, and as they are not infiltrated with the purulent exciting cause of the disease, they are of a most healthy character. The newly formed muscles and their coverings are firm and hard, and capable of tonic contraction.

At times during the treatment it is proper to make Pyonex applications over wasted parts, having specially in view their being recovered by a new growth of tissues. The shoulder joints, for instance, are specially liable to attacks of pain, owing to the fact that they are so scantily covered by the wasted tissues that a slight exposure, or draught, will bring on a fresh attack of pain. A few applications to them will wake up the lost powers of reproduction, so that they will again become covered by their natural muscular covering, and the further predispositions to painful attacks be avoided

In addition to these local beneficial effects, in the parts where the treatments are applied, there is usually a marked improvement and increase of healthy tissues, not only on the parts that are specially bare, but throughout the entire frame, all the flabby muscles becoming hard and of increased volume. While describing the extraordinary effects just mentioned it may be advisable to add a word of caution, so that such results may not be looked for in every case.

Soft  
muscles.

In cases where the vital forces are reduced to the lowest ebb by age, and an exceedingly long continuance of the disease, due allowance must be made for these conditions. The system has not the power to effect a generous discharge of pus, and the applications must be of very limited area. Therefore all the improvements must be in the same proportion.

Chronic  
cases.

But the one consoling fact for the patient is that there is an actual improvement taking place. Life is preserved and the progress of the disease is arrested. It becomes a patient under these circumstances to accept such improved conditions with thankfulness, and to display a becoming patience ; while the greatly exhausted powers are being exerted to the utmost to continue the course of resolution. A case may here be mentioned, in passing, in which the patient was over 6 feet in height, and so crippled that the great toes pointed inwards diagonally to each other, and the legs could not be straightened. Both palms pointed backwards and upwards, and the arms could not be straightened. For many years this crippled state continued. Pyonex Treatment was resorted to, and during twelve months scarcely any progress was

Consoling  
fact.

Example.



made. The proper method of applying the instrument in this particular case was then ascertained and adopted, and resulted in a satisfactory improvement, and by perseverance with the applications every part was at length restored to perfect health. The patient could walk naturally, and was quite upright, and at the age of sixty-five he married, and had no return of the disease. All this happened to him simply as a reward to his perseverance.

On the  
right track.

When the changes to be effected are of an extensive nature, and when vitality is low, a proportionate time must be allowed for such changes to be wrought. While there is a steady expulsion of pus taking place week by week and month by month, it may be taken for granted that the patient is on the right track towards recovery, and the return to health is simply a matter of time, provided always that the method of applying the treatment is skilful and aided by such medicinal remedies as are called for.

Milder  
cases.

But when the disease attacks a youthful patient, or even a person of middle age, and has not had sufficient time to effect severe ravages in the joints, or severely contract the muscles and limbs; it is delightful to witness the rapid improvements that take place. Three or four months' treatment may suffice to effect a restoration to health. Every patient is liable to such accidents as are produced by accidental exposure to cold, and the treatment often has to be temporarily suspended in such cases, because of extreme weakness or a high pulse. All such accidents and delays are as a matter of course to be allowed for.

Accidental  
delays.

*Bursæ.*

*Bursæ.*—Bursæ, which are filled with a serous fluid,

and from half of an inch to three or four inches in length, and of varying width, are of common occurrence, especially on the dorsum of the wrists and in the region of the knee joints. These bursæ are about as stubborn as anything that can be imagined, when treated by ordinary methods. But in the vast majority of cases, a perceptible difference can be detected, after the first application of the Pyonex is made on the forearm or calf. There is less fluid, and the walls are not so tense. The absorption goes on daily, and usually in three or four weeks they can scarcely be detected. Dispersion.

But in rare instances they are recalcitrant, and take months to disappear. In this latter instance, probably all the symptoms of the case will be of an unusually stubborn character. The combination of gout and rheumatoid arthritis at times notably increases the resistance of these bursæ to treatment, but a continuation of the treatment is all that is required to meet the case. Combined with gout.

*Arteries and Veins.* — Some very interesting changes take place in the arteries and veins during the time that the patient is under the Pyonex Treatment. Blood-vessels.

During the progress of the disease year by year, more especially in those cases where the patient is becoming more and more emaciated, the vascular system can claim no exemption from the general atrophy, which attacks every part. The calibre of the blood-vessels diminishes, and their walls become thin; this effect being most marked in the distal parts. In the case of the radial and ulnar arteries, for instance, as previously mentioned, they become Their atrophy. Calibre. Radial and ulnar.

so obliterated that the pulsation of the heart's beats may be entirely absent at the wrists. But if the line of the artery is carefully traced upwards, the pulsation may be detected about half way up the arm.

Effects.

General  
atrophy.

The effect of this arterial atrophy is disastrous, as far as regards the chances of resolution. Inasmuch as the whole arterial system is similarly affected, the natural flow of blood is cut off, or so diminished from every part that general absorption of the soft tissues sets in. As the disease advances, the whole of the vascular system is similarly involved; and as the blood supply is constantly diminishing, the tissues are steadily wasting, the proper supply of synovial fluid necessary for the lubrication of the joints ceases, and they become firmly ankylosed; the ligaments also, by contracting, contribute to hold them fast.

Anchylosis.

Muscular  
atrophy.

The effects of this general atrophy are especially marked in the muscular system. The muscles that suffer most are those which have been generally brought most into use, and have had too much strain. If, for instance, we take those of the upper and lower extremities, in almost every case they become primarily affected. Their bulk becomes sensibly diminished. As their diameter becomes reduced, there is a corresponding diminution in their length. This causes a steady tension to be maintained on the corresponding tendon. The shafts of the long bones are thereby drawn towards each other, and the limbs become permanently flexed.

Shortening.

Contraction  
of  
joints.

This contraction increases in an exact proportion to the muscular contraction, and any attempt to extend the contracted joint is attended by severe pain, owing to the violence which is done to the parts,

which have become quite sensitive, owing to their diseased condition. This contraction is also further increased by the same process of atrophy which affects the shortening of the tendons. In extremely chronic cases, where the disease is partially quiescent, the division of these tendons may lead to the extension of the limbs, and a considerable improvement in the patient's condition.

Increase.

Division of tendons.

But now it becomes an interesting point to determine what is the cause of the atrophy, which produces these unnatural contractions, and then to make reference to the means by which this cause may be removed.

Cause.

One primary cause can be most safely ascribed to the straining of the muscles and ligaments by excessive use or exercise.

Primary cause.

When young ladies have spent much time in mountain climbing, for example, the legs are first attacked by the disease.

But when a patient applies for treatment, we cannot deal with these past causes. Our attention is more immediately engaged with the actual state as presented to us at the moment. We find that the joints are contracted, owing to the inroads of the disease, and our object is to discover and remove the exciting cause. The Pyonex Treatment here comes to our assistance, and enables us to arrive at satisfactory conclusions.

Discovery of the exciting cause by the Pyonex Treatment.

In cases which are not of a great many years' duration, two or three applications of the Pyonex Treatment usually suffice to reveal to us that the cause of this atrophy, which involves the shortening of the muscles, is acid and purulent infiltration. Pus

Purulent Infiltration.

and acid form in the system, and as they invade the muscles they become poisoned. The natural reproduction of their tissue is checked, and they begin to diminish in volume. As long as the devastating pus is present, Nature's recuperating powers are suspended; and the greater the proportion of acid pus, the more rapidly the wasting process proceeds.

Pus  
expulsion.

Effects on  
muscles  
and con-  
tracted  
joints.

But now, supposing we take the muscles of the calf, for instance, as the affected part, and we make an application of the Pyonex over the whole of the gastrocnemii and tibialis anticus. In about forty-eight hours there is a profuse discharge of acid pus from every perforation of the instrument. The effect of this will be soon perceptible. There will be a sensible lengthening in the body of the muscles. The strain on the tendons will show a diminution, with the immediate results that the motion of the joint is greater, the contraction diminished, and the extension increased.

After the lapse of some days, a second discharge of pus may be produced by the same means, and a further improvement in the symptoms will be noticeable. And as the Pyonex applications are continued, and the purulent discharges are repeated, so the muscles continue to increase in length and calibre, until every trace of shortening disappears. The limb can be extended to its full extent, and the joint flexion vanishes. If the pus expulsion be checked by the cessation of the treatment, the muscles remain *in statu quo*; and when the treatment is resumed, the improving symptoms reappear.

Conclu-  
sions.

The only rational conclusion that can be drawn from these results appears to be, that acid purulent



infiltration is responsible for the morbid condition of the muscles, which leads to the atrophy, which is a marked characteristic of rheumatoid arthritis; and that the pus, which is the exciting cause of this morbid state, is expelled from the part by a natural effort, when suitable aids are provided. It may be here noticed that the contraction of a joint is not always due to a morbid condition of the joint itself, but may be caused by the shortening which is produced by the atrophy of the muscles, and the consequent increasing tension which approximates the shafts of the bones.

Exciting  
cause  
expelled.

Cause of  
articular  
contraction.

An allusion has been made to the fact that in rheumatoid arthritis, the muscles, especially of the upper and lower extremities, are nearly always very soft and flabby. But after two or three or more applications of the Pyonex, they become decidedly firm and hard. This would tend to prove that their extremely atonic condition is also due to acid and purulent infiltration.

Atonic  
muscles  
toned up.

When there is stiffness in a combination of muscles, it may take several applications to dislodge it. Eight or ten may be required. The fourth and fifth applications and some following ones may yield but a comparatively small discharge of pus, but the feeling of stiffness still continues, and shows no disposition to leave the part. On the application being continued, however, there is suddenly a profuse discharge, the pustules becoming confluent, and underlying the whole of the integument in the immediate vicinity of the stiffness. This is a final and victorious expulsive effort of the system, and the stiffness disappears *in toto*.

Muscular  
stiffness.

Removed.

Horny  
growths.

In cases of long standing, a hard, horny growth may form under the nails, especially of the toes. The extremity of the nail is pushed up, while the growth continues to increase in bulk, producing deformity and an uncomfortable sensation to the patient. This growth may be gradually absorbed by the application of *Oleum Chaulmoogra*. The oleum assumes the consistence of ointment at ordinary temperatures, and should be used from an ordinary ointment box, and be applied every night; the cure is hastened by keeping it applied also by day.

Absorbed.

The veins,  
multiplied.

A wonderful activity is manifested in the veins, especially of the upper and lower extremities, during the earlier stages of the treatment. They appear to multiply in number until a complete plexus is formed, and not only in number, but in size. It may not be too much to say that their volume is increased two and three fold, while their contained blood is some shades darker than is natural.

This is an interesting feature, as it denotes that a new and powerful circulation has become established in the parts which were previously so torpid; the moribund healing powers again start into life; and the natural efforts being no longer destroyed by the presence of the deadly virus, the therapeutic changes of the system are exerted in a superlative degree, and by the elimination of the exciting cause, new life and resolution are established. It is scarcely necessary to state that a similar increase in the number and size of the corresponding arteries must also take place. The flow from the heart must equal the return to it. Although we cannot see the arteries, we know by looking at the veins what is happening

Arteries  
their re-  
habilita-  
tion.

to them, and we readily admit that the effect of this newly restored blood supply must be regarded as the one important condition on which our hopes are built, for the restoration of the diseased part to its pristine health.

Allusion has already been made to the radial and ulnar arteries, when under similar conditions. But in their case, although we should not have our attention specially arrested by a cursory inspection of the limb; the examination of the pulsation, and the new and full beat having returned to the wrists, where it was previously entirely absent, serve as convincing proofs of their restoration to their former dimensions.

A convincing proof.

In some cases there is a rapid increase of strength and power of locomotion, in the incipient stage of the treatment. One patient, for instance, who had been unable to walk for five years, walked half a mile within three weeks of commencing treatment. Another patient who, when sitting, was unable to lift either foot an inch from the floor, and could bear no weight on them, was able after a few applications to move his feet freely, and bear his whole weight on them, and move from one place to another. In this case the patient was tall and stout, and the loud crunching of the cartilages of the knees when the limbs were extended or flexed, bore evidence to the amount of disorganisation that had already taken place in the joints. Both of these patients were wealthy, and had spent many years in moving from place to place, making trial of mineral baths and every kind of treatment that afforded a hope of some alleviation.

Rapid increase of power and motion.

It is usual for patients who are emaciated, owing

Emaciation.

to the inroads of disease, to show a steady increase of weight while under treatment. The wasted muscles throughout the whole system increase in volume and become hard. The rapid increase is of a most marked character, in those parts where the Pyonex treatment is frequently applied.

Dyspepsia.

Distressing dyspepsia, in the most chronic cases, is always ameliorated. The gastric functions are altogether improved, after a free discharge of pus has taken place from the abdomen. Two or three applications generally suffice to effect an improvement.

Sciatica  
pain.

The sciatic pain which comes on so frequently sometimes quickly yields to the treatment. But in very chronic and stubborn cases, many applications over the course of the sciatic nerve are needed in order to overcome the trouble. In these cases the administration of Salophen and Phenalgin is of marked benefit. In staving off the severe attacks, and relieving the pain during the paroxysm, they have proved a boon.

Salophen.

Skin  
irritation.

The irritation of the skin, which is due to the constant exudation through the pores of an acidity which is characteristic of the disease, is much relieved by sponging with a diluted mixture of Glyco-thymoline or some other alkaline application. This irritation diminishes during the course of the treatment, owing to the checked formation of acid in the system.

Bruised  
nates.

In very chronic cases, when the patient is unable to be in any other than a sitting posture, the nates may become of a dark colour and assume the appearance of their whole area being bruised. A few applications of the Pyonex in the lumbar region will restore the affected tissues to their natural colour

and health. The sitting position is again well borne, and one of comfort.

Constipation is almost a constant concomitant of this disease. It may not be of a severe character, but the peristaltic action of the intestines is, as a rule, defective. By treating the hypogastrium with the Pyonex, there is sure to result a free discharge of pus. The beneficial effect of the elimination of this impurity is always observable in an improved function of the muscular intestinal coat. In some cases the torpor is entirely overcome, while in others, aperient medicine has to be taken with less frequency. Small doses of Cascara Cordial, taken regularly three times a day, are perhaps the most suitable remedy. Purgen is also useful in stubborn cases.

There is a marked diminution of insomnia after a few weeks' treatment. The sleep is sounder and more refreshing, and there is but little call for hypnotics. This is probably due, in part, to the fact that a purer blood is supplied to the brain; also the brain medulla is drained of the mass of impurity with which it, in common with every part of the system, was infiltrated.

The nerves quickly show an increase of strength. The frequent breakdowns and despairing thoughts disappear. The patient ceases to be foreboding, and with the return of strength and increase of general tolerance, the entire nervous system is braced and toned up.

*The Feet.*—A few additional remarks are required respecting the treatment of the feet.

In chronic cases, when the feet are severely attacked, the natural form of the foot is somewhat



Swollen  
bones, &c.

obliterated. The astragalus, in combination with the lower ends of the tibia and fibula, as well as all the surrounding soft tissues, are considerably swollen, so that the ankles do not appear at all. There is also a perceptible swelling of the carpal and metacarpal bones.

Special  
treatment  
needed.

Although, in ordinary cases, the disease can be almost eradicated from the feet by making applications to the calves and tibialis anticus, yet, in the severer cases, no satisfactory progress can be made without adopting a special method of treatment. The upper surface, the sides and toes, as well as the whole of the ankles, have to be treated, and the perforations have also to be carried around to the posterior surface of the tendo Achillis. If the swelling resulting from the application disappears in a few days the case is proceeding all right; but if it last a fortnight, fewer perforations should be made. When there is no swelling after the application the perforations should be multiplied to the full extent, *i.e.*, to overlap, and double overlap, so that the whole surface may be covered two or three times by the perforations of the instrument. The oil also must be brushed in longer and in greater quantity.

Swelling.

Special  
treatment  
of joints.

When the general condition of the patient is sufficiently improved to bear a more vigorous treatment, and the knee joints, wrists, or other parts still remain in a swollen condition, and the ankylosis has not yielded, the same kind of treatment has to be adopted for each part.

Perfora-  
tions.

The discharge may diminish until there is very little, the pustules being very small and the progress slow. In such case the perforations should be made

with a little harder blow, and constantly increased in number, so as to produce a greater revulsion.

The flow of blood to the part is all the time in the ascendancy; every artery and vein is growing in size, the counter-irritation is kept high, and the adventitious tissues which have become solidified, and bound the articulating surfaces together, are slowly absorbed. The bones themselves also, when swollen, owing to a constant process of absorption, lose their hypertrophied condition, and gradually resume their natural dimensions. Swollen bones.

While these changes are taking place the soft tissues around the ankles, which were permanently swollen, return to their normal proportions, so that the natural form of the ankle and the other parts of the foot is resumed. Swollen tissues.

In more chronic cases the absorption of the swollen bones may be comparatively rapid. The cancellous tissue has not had time to become hard. Absorption of swollen bones. In two or three weeks there is a perceptible diminution of volume, of the tumid parts. But when, owing to many years, the atomic structure has undergone a total change, the blood supply has been reduced to a minimum, owing to the absorption of the arteries, and there is a marked disorganisation in the hard and soft tissues, the repairing process takes a long time to become established. There is also so much Time required. to be done that much patience has to be exercised, while the absorption of the morbid products of the disease is progressing, and the formation of new and healthy tissues is proceeding. But the consolation is, that from month to month an actual improvement is observable.

**Bandaging.** The bandage which secures the cotton wool must be applied carefully, not sufficiently tight to cause the wool to absorb the oil. Nor must the patient wear a tight-fitting boot while the pustules are forming. A loose felt slipper is best, and the less walking the better during the forty-eight hours following the application. Much time and trouble is lost from want of attention to these details. The result of each application has to be thoroughly examined, to see that the forming pustules have not been rubbed off.

**Obliteration of treatment.**

After a little practice the eye can detect at once when this has happened. Instead of pustules there are red smooth marks at the point of the perforation of every needle. The therapeutic benefit, when this happens, is but small.

**Frequency of the applications.**

The frequency with which the applications are made, is governed by the patients' power to tolerate them. As a rule it is advisable never to treat more than one upper or lower extremity at a time. If in treating a lower extremity, from the ankle to the hip, the discharge of purulent matter be of fair quantity, and the swelling be considerable, and require three or four days to disappear, the pulse and strength of the patient should be carefully watched. If the pulse go beyond 85, and the weakness be such as to be noticeable, a good tonic of iron, Quinine and Nux Vomica will be advisable, and a rest of a week without further treatment.

**Exercise.**

Considerable improvement is at times realised after two or three weeks' treatment. The chronic swelling in the toes and knees may disappear, and there may be comparative freedom from pain. In

such cases the patient is liable to exercise his regained power of locomotion to excess, in which case the swelling and pain may reappear and the lameness return.

It is well, therefore, to bear in mind that the parts which have been so long in a morbid state, are yet in a weak condition, and require time in order to become sufficiently strong to support the weight of the body. The leg is bandaged from the ankle upwards in order to support the weak tissues, and walking exercise is avoided for some weeks.

If the arm or leg become swollen after being treated, it should be regarded as a favourable symptom. It is in fact a proof that the treatment is taking effect. The swelling is due to the transfer of a part of the exciting cause from the more central or deeper parts to the soft tissues, from which point the circulation is able to take it up and convey it away.

The cotton wool which is applied may be secured to the upper or lower extremities, either by a bandage, or by a sleeve slit up from end to end, and tied by pieces of tape at every three or four inches. In either case, should the limb become swollen, it should be loosened so as to be comfortable.

After four, five, or more, applications have been made, if there be but little discharge or swelling, and if at the same time the progress appears to be slow, the perforations may be made at less distance apart, so as to be gradually increased to double or treble the number. The blow also may be a little harder, so as to increase the depth of the perforations, and the oil be applied more freely.

Swelling  
a good  
symptom.

Bandage  
or sleeve.

To make  
the treat-  
ment more  
effective.

By these measures the efficiency of the treatment is maintained until the cure is completed.

#### SYNOPSIS OF CASES.

The relation of some cases which were treated by the Pyonex is appended, in order that an idea may be formed of the method of its application, and the progress that may be expected to be derived:—

*Case 1.*—The whole frame was involved, the patient was given up and on the verge of the grave. Duration of disease, five years. Resolution in twelve months.

*Case 2.*—The duration of the disease was thirteen years, the shoulders and fingers principally affected. Resolution in four months and ten days.

*Case 3.*—The whole system was involved; the case was recent, the duration of the disease being only four and a half months. The cure was effected in three months.

*Case 4.*—The duration of the disease was twelve months. One application only of the Pyonex sufficed to restore health.

*Case 5.*—The feet were most affected. The duration of the disease thirty years. Eighteen applications were made, resulting in recovery.

*Case 6.*—The whole system was invaded, but the symptoms were of a mild character. The case is inserted in order to show how the disease may be eradicated from the system, while as yet its symptoms are not fully developed.

*Case 7.*—This case was associated with rheumatic iritis, and serves to show how the eyes were rendered proof against its attacks.



*Case 8.*—The main point of interest in this case is, that it was not caused by a micrococcus as in most cases, but by a myriad of bacilli of the anthrax type.

#### RHEUMATOID ARTHRITIS—CASE I.

A patient, aged 39, Head Master of a school.—Pain commenced in the right heel, five years ago, likened to standing on a pea. It extended to the ball of the great toe. Pain and swelling attacked the left foot twelve months later, and six months later the knees, and six months later on the shoulders. The elbows, spine, neck and jaw have been attacked within the last three months. The pain in the spine extends from the cervical to the lumbar region. There are neuralgic pains in the head and jaw. The mouth cannot be opened, it being impossible to separate the teeth more than the eighth of an inch. There is scarcely any motion in any joint in the body. The hands can be brought only to within six inches of the mouth. The arms cannot be straightened. The whole body is extremely emaciated. He is very weak and unable to help himself in any respect. He has to be lifted in and out of bed, and sits in a chair for some hours each day. He has little appetite. Pulse 112.

Symptoms.  
Pain.

The mouth.

Motion.

Pulse.

The disease is steadily advancing, and his nightly fear is, that the mouth will be firmly closed by the morning. During his residence in a Mineral Water Hospital and a Homœopathic Home, as well as during the whole course of medical treatment, the progress of the disease has been uninterrupted, and he has no more hope of recovery, but appears to be

on the verge of the grave, and is sinking fast. His doctors gave him up, and when it was proposed to  
 Treatment. call in the writer, he said, "If I must die, I must die."

A more hopeless case than this could scarcely be met with. In addition to the fore-mentioned  
 Knees. symptoms, the knees were very swollen and admitted  
 Elbows. of scarcely any motion. The elbows were also  
 Neck. swollen and the joints fixed. The neck was also so fixed that he was wholly unable to rotate his head. As he sat wrapped up in the chair and conversed, the only parts he had any power to move were the  
 Eyes. eyes, which were rolled to and fro, according to the person to whom he spoke.

But notwithstanding the apparently hopeless condition of this patient, after taking all things into  
 Prognosis. consideration, I formed a favourable prognosis of the case, and told the patient that my opinion was, that under the Pyonex Treatment he would recover his health.

Locality  
 for first  
 application. There being a total absence of strength, and an inability to take anything but liquid food, the greatest care had to be exercised in applying the Pyonex Treatment, so as to communicate no shock to the system, and make no further drain on the already reduced vitality. Having regard to these circumstances, I selected one of the most distal points for the first application, and in order to ascertain the limit of toleration, the right calf was decided on. The great toe and knee joints were swollen to twice their normal size, and admitted only of the smallest amount of motion.

Details of  
 treatment. The details of the treatment of this case are given for the information of those who are unacquainted

with the Pyonex method, and that the progress of the cure may be watched step by step, as well as the effect of each application.

On August 5, 1896, the first application of the Pyonex was made, and consisted of twenty perforations on the right calf and tibialis anticus. This resulted in a discharge of pus on the third day ; the pustules appearing at every perforation. First application.

Already favourable symptoms appeared : The swelling of the knee joint was perceptibly reduced, and the consequent increased motion was such as to enable the patient to swing the foot to and fro. He could also bear more weight on the limb, and expressed himself as believing that he should recover. The application had caused no shock or diminution of strength, but if anything had contributed to his comfort. Swelling.  
Motion.

Five days later (August 10) a similar application was made to the left calf ; this also resulted in a free discharge of pus. August 13, there were now signs of returning strength, so that the patient was able to rise from his chair without assistance and stand ; which he had not done for months. Second application.  
Strength.

An examination of the blood was now made under the microscope, and showed adherent and matted red corpuscles, and about double the right number of leucocytes ; litmus paper showing the whole to be loaded with acidity. Examination of blood.

The patient's tolerance of the treatment being now satisfactorily established, no time was lost in directing the attention to the parts where the symptoms were the gravest. It being most important to relieve the tetanic state of the maxillæ, four days later, *i.e.*, on Toleration.

Third application, 12th day. the twelfth day of the treatment, an application was made on the upper half of the back: this being the proper part to treat for this purpose. This application produced an unusual kind of discharge, which continued to be expelled in successive crops for seventeen days.

Seventeen days' discharge.

This extraordinary result went to show that the tissues in this part were advanced to a high degree of purulent infiltration. The discharge extended on the cuticle about three inches all round, beyond the margin of the application. Instead of being the usual fluid pus it was papular in character, and of a cheesy consistence, and gritty to the touch. The grit fell off, or could be rubbed off by the fingers. It was like coarse grains of sand or mustard seed, and was composed of dried up or decayed purulent matter. It was not confluent because of its solid character. But it literally covered the skin, so that the marks of the instrument were not perceptible.

Pulse.

The pulse, which was 112 at the start, had now fallen to 104.

After such a discharge from this application we fully expected some tangible results, and were not disappointed.

Improvements.

(1) The power of motion was so far restored to the shoulder joints that the hands, which could before only be brought to within six inches of the mouth, could now be raised to the chin. (2) The tetanic state of the jaws was so far relieved that whereas they could not before be separated more than the eighth of an inch, the mouth could now be opened two full inches. (3) Also the maxillary pain and stiffness had greatly diminished, permitting of the

Maxillæ.

mastication of food. (4) There was a further improvement in strength and in the system generally.

Owing to the extraordinary duration of the effects of this application, an interval of twenty-one days elapsed before it was advisable to give the next.

The fourth application was made to the left arm on the thirty-third day. Fourth application, 33rd day.

There was constant pain in the left wrist and elbow, and the object now was to allay it. The arm swelled as a result of the application, which was a good omen. There was not so much discharge as usual. During the second and third day the pain completely disappeared, and the motion of the elbow was increased. Pain relieved.

While lying in bed on his back he crossed his legs alternately, and raised them about a foot from the bed. He stated he had not done this for the last twelve months. Here was an encouraging proof of returning strength. The appetite has much improved, and the pulse is steady at 84, being a drop of twenty-eight beats in thirty-three days. Pulse 84.

Seven days later the next application was made to the right arm, and produced only a small discharge. Pulse 88. The muscles are beginning to lose their flabbiness and becoming firmer. He sleeps soundly all night. Fifth application, 40th day.

The lumbar region was next treated, in order to relieve a spinal pain. The pain disappeared. Appetite still improving. Pulse 86. Sixth application, Forty-sixth day.

The next application was made to the shoulders. He caught cold, from being accidentally uncovered at night. The pulse rose to 92. Is weaker, has less Seventh application, 49th day. Pulse 92.



appetite, and has passed two bad nights. There was but a small discharge resulting from the application.

Eighth  
application,  
54th day.

Five days later the Pyonex was applied a second time to the right leg. A quantity of thin yellow serum was discharged on the second and third days. Feels weak and has no appetite. Pulse 88.

Ninth  
application,  
60th day.

Pulse 72.

Six days later a second application was made to the right arm. He has recovered from the effects of the cold. The pulse is now normal at 72. The appetite is good and he feels stronger.

Great toe.

Elbow.

The swelling in the right great toe joint is disappearing. The pain and swelling in the right elbow, which had compelled him to keep the arm flexed, has so far diminished as to permit of its being straightened.

Three days later he, unfortunately, caught another cold at night, owing to a draught from the casement. The pulse rose to 88, he was weak from loss of sleep and had little appetite. He continued in such a low state, with a rising pulse until it reached 100, that further Pyonex Treatment, with the exception of an application on the chest to relieve the cold, was delayed for three weeks, when another application was made to the right arm. As a further ill effect of the catarrh, an attack of jaundice came on. Prescribed 4 grs. Pil. Hydrarg. and Haust., Rhei et Sennæ in the morning. In ordinary cases a Pyonex Treatment over the liver would relieve an attack of this nature. But the low state of the patient did not favour this course.

Tenth  
application.  
Eleventh  
application,  
81st day.

Pains also returned to the wrists owing to the same cause. Prescribed Ext. Belladon. ʒiii., Spt. Camph. ʒiii.,

Tr. Opii. ʒii., Aquæ Fervend. ad. ʒiv. Ft. lin. for the pain. Some relief was obtained.

The next application of the Pyonex was made after an interval of seventeen days, to the dorsal region of the spine. The resulting discharge was scanty. He is now eating and sleeping well.

Twelfth application, 98th day.

Nine days later, an application was made to the right arm and fingers. The middle finger joints of the right hand have swollen a little, and have now the characteristic fusiform shape of rheumatoid arthritis. The ulnar deflection is also well marked. These two symptoms have appeared within the last fourteen days, and were caused by the patient using a heavy walking stick to strike the floor with, instead of using a bell. Pulse 92.

Thirteenth application, 107th day.

Fusiform joints. Ulnar deflection.

Three days after the last application, another was made to the shoulders and the whole of the scapular region. A good discharge of pus resulted from the application to the right arm and fingers. There is an increase of motion in the wrist and fingers. The pulse has become normal at 75 and the general tone has improved. Gentle massage has been employed for some weeks. Ol. Chaulmoogra was now ordered to be used with the massage.

Fourteenth application, 110th day.

Some of the pain in the jaw, which was caused by the draught, was relieved by rubbing in the Chaulmoogra ointment. The pulse again rose to 82, and considerable weakness ensued.

Three days later, with the pulse at 80, an application was made to the right arm and leg. Pain and swelling having supervened in the right wrist and fingers, the Pyonex was applied to both fore arms. The pain and swelling rapidly disappeared.

Fifteenth application, 120th day.

Sixteenth application, 130th day.

Seven-  
teenth

application,  
140th day.

After an interval of ten days the Pyonex was applied to the shoulders and left arm.

The patient thinks he has increased in weight about 14 lbs. since commencing the treatment. The upper back and scapulæ are now well covered with muscle, but the scapulæ are still prominent. The patient appears to be deriving some benefit from a mixture containing Fluid Ext. of Manaca, which he has been taking for three weeks.

Eighteenth  
application.

After an interval of eight days the Pyonex was applied to the left arm and hand, in consequence of pain in the wrist, which was occasioned by taking cold while the chimney was being swept. Pulse 72 and strong. The muscles of the arm are hard and considerably increased in volume.

Nineteenth  
application.

January 4.—To-day completes five months of Pyonex treatment. The Pyonex was applied to the left leg. Ordered Fluid Ext. of Manaca, half an ounce daily. Pulse 64. Strong and steady.

Twentieth  
application.

January 9.—The Pyonex was applied to the left leg. He continues the Manaca, also Chaulmoogra oil internally. The Manaca appears to give tone to the system. The expression is firmer and the lips are more contracted. The appetite is improved. The swelling of the right finger joints is much reduced. This last change is an interesting one, showing the arrest of the progress of the disease in this particular locality, and some progress towards resolution.

Twenty-  
first  
application.

January 14.—The Pyonex was applied to the right arm and forearm. Prescribed Menthol gr. xl., Cocaine Mur. gr. xv., Ol. Caryoph. Ft. lin.

The application of this liniment to the temporo-maxillary articulations relieved the pain, and enabled

him to open the mouth wider. Continues the Manaca.

January 21.—The Pyonex was applied to the shoulders, left arm and hand. He is gaining weight steadily, but complains of weakness.

January 30.—The Pyonex was applied to the left leg and thigh because of an occasional pain in the metatarso-phalangeal joint of the second toe. Pulse 76. Appetite good. Feels better than he has for years past; never felt better in his life except for the weakness. Ordered Pil. Hydrarg. gr. 5 and Haust. Sennæ to keep the liver unloaded. Ordered mixture. Twenty-third application.

R	F. E. Cascara Sagrad.	...	...	...	3i.
	F. E. Berberis Aquæfol.	...	...	...	3ii.
	F. E. Boldo	...	...	...	3iss.
	F. E. Serenoæ Ser. q.s. ad	...	...	..	3viii.

3i. ter die ex aquâ.

This mixture produced dark-coloured, slimy stools, and high-coloured water. The system was thoroughly cleansed; the appetite improved, and he felt much better.

February 15.—The Pyonex was applied to the shoulders and right arm. Twenty-fourth application.

February 18.—An application was made to the right leg. Twenty-fifth application.

February 25.—The Pyonex was applied to the left arm and hand. The swellings in the wrists and finger joints have now quite disappeared. He eats and sleeps well, is steadily gaining strength and power of motion in every part, and progressing satisfactorily in all respects. Twenty-sixth application.

March 9.—The Pyonex was applied to the whole of the back. Pus was thrown out over the scapulæ Twenty-seventh application.

Comparison of the discharges.

and the upper part of the spine; the discharge covering all the cervical vertebræ. It was no longer of the gritty character which was expelled on the first application to the back, but partook of the nature of ordinary pus, having a moderately thick consistence, and yellow colour. But on the lumbar region the discharge was scanty; the reason being that the spine and ribs were here covered by little more than the bare integument.

The extraordinary difference in the appearance of the upper and lower parts of the back was due to the fact that various Pyonex applications had been made to the cervical region, whereas the lumbar region had scarcely been touched.

The morbid condition of the articulations of the upper extremities and the maxillæ, compelled much attention to be directed to these parts, and the bacterial toxins being to a great extent expelled from them, owing to the frequent Pyonex applications; there was, therefore, no longer any hindrance to their recovering their natural volume and tone. Another reason why the lumbar muscles had not become restored, was that their vascular system was still in an atrophied condition. But several applications were subsequently made to this part, and the results were such as may always be expected in similar circumstances.

Arteries and veins.

The arteries and veins immediately began to increase in calibre, the temperature of the part rose several degrees, and the atrophied muscles began to show signs of new life. Their reproduction rapidly proceeded, and in a few weeks their reinstatement was complete.



March 16.—The patient had taken a fresh cold by sitting in a room without a fire; and a Pyonex application was made to the shoulders and upper spine, with a view to remove a pain in the nucha. The left arm was also treated, because of some return of pain and swelling in the wrist. Twenty-eighth application.

March 23.—A Pyonex application was made to the whole of the back in order to remove stiffness in the lumbar region and pain in the coccyx. An extensive application of this class is always preferable to a circumscribed one, when the strength of the patient is equal to it. As the tolerance in the present case was now all that could be wished, there was every reason for giving him the benefit of the extended application. Twenty-ninth application.

March 31.—The next Pyonex application was made to the right leg. Up to the present date the treatment has lasted nearly eight months. Thirtieth application.

The pains were nearly all relieved by the Pyonex applications, while in some instances medicinal help was resorted to.

The swollen joints were also reduced by the applications.

*Pari passu* with the expulsion of the bacterial toxins which were thrown out in the form of pus, an improvement took place in the affected parts.

The relapses that were caused by the repeated catarrhal attacks, constituted serious delays in the progress of the cure. Had the treatment commenced in the early part of the year, these would probably have been avoided. Relapses.

After March 31, twenty-nine more applications were made to the back, legs, lumbar region and arms, Twenty-nine applications.

Resolution. mostly in rotation, the resulting purulent discharge all the time becoming less. As the patient's general condition steadily improved, there was an absence of the marked predisposition to relapse from small exposure to chills ; also, the weather becoming warmer, more satisfactory progress was made. The tetanic symptoms of the maxillæ completely disappeared. The muscles of the neck, which were so wasted and stiff, became fully restored and naturally pliant, admitting of the freest motion of the head. The elbow and knee joints resumed their natural proportions and strength. Out-of-door exercise was resorted to as soon as the cold weather had passed away. Power quickly returned, and the short walks soon became long ones of five miles a day. He soon regained his natural weight, and the steep hills in which Bath abounds were no barrier to his excursions. He resumed bicycle exercise, and continued to gather strength and tone. His muscles became quite hard and a good colour returned to the face. There was no swelling or pain in any joint, nor could a trace of the disease be discovered in the system.

Insured as  
a first-class  
risk.

Years subsequent to his recovery, he was desirous of insuring his life in a London Life Insurance Company. Although a frank account of this illness was given to the Examiner, he was unable to find anything to form the least impediment to his acceptance, and he is now insured as a first-class risk.

#### RHEUMATOID ARTHRITIS.—CASE 2.

History  
and  
symptoms.

A lady, aged 38, was attacked thirteen years ago with pains in the finger joints, shoulders, and across

the dorsal vertebræ. The pain in the shoulders was very severe, and at times obliged her to walk the room the whole of the night. Both thumbs and the middle finger of the left hand have been painful and weak for two years, and cannot be used; the joints have the fusiform swelling which is peculiar to the affection. She cannot dress herself. The right knee is also affected, causing severe pain on descending stairs, and there is pain in the right heel. There have been intervals of comparative freedom from pain, but each year they are of shorter duration, while the pain is more severe. She has no appetite, is always constipated, being often a week without an action, and suffers from acute dysmenorrhea, having to keep her bed for three days at each period.

The first application of the Pyonex was made on September 1, 1896, to the right arm and shoulder, where the severest pain was felt. This produced a yellow discharge. Treatment,  
first.

September 4.—She reported having had no pain in the shoulder since she was treated.

September 8.—An application was made to the back and chest. Her hands, which formerly were always cold, have been quite warm since 1st inst., and she has felt better in herself. Second.

September 18.—The menstrual discharge ceased five days ago, and with a view of promoting a better action of the uterus, and diminishing the severe pain, an application was made over the abdomen. This produced a discharge of small red pustules, which were of a very irritant character. While this rash was being expelled, the usual dysmenorrhœa pains were reproduced, so that the patient thought that Third.

the flow would come on again. The pain has disappeared from the right thumb, which has now some returning strength.

Three more applications were made to the right arm and shoulder up to November 2. She now reported less pain at the last menstruation, also that the pain in the left thumb, which had been useless for two years, had so diminished that it could be used.

Seventh. November 16.—An application was made to the right leg, to remove a severe pain just above the insertion of the tendo Achillis.

Eighth. November 19.—The left leg was treated; the resulting discharge was of a deep yellow, and the limb became somewhat swollen. On December 6 reported that the pain in the right heel had disappeared some days ago.

Ninth. December 7.—The right shoulder was treated in order to remove a sharp pain under the biceps. All the pains had now disappeared, and all her limbs could be used with comfort.

Tenth. January 10, 1897.—The last application was made to the right shoulder, which completed the treatment of the case.

The patient was seen about a year after this date, and had had no return of the disease.

The constipation was relieved by fluid extract of *Cascara Sagrada*, and the remaining menstrual pains disappeared by the administration of fluid extract of *Viburnum Prunifolium*.

#### RHEUMATOID ARTHRITIS.—CASE 3.

History. A patient, aged 26, a Parsee, native of Bombay, medical student at Edinburgh, and about to go in for his final examination, stated that:—

Four and a half months ago he was attacked by low fever, which lasted for several weeks, during which time rheumatic pains set in, attacking first the right wrist and knee, and in rapid succession, the elbows, shoulders, ankles, and every other joint was invaded, including the right jaw. All the joints.

After being informed by various medical men as to the seriousness of the character of his affection, and of there being absolutely no way to deal with it successfully, he came to London and was under Salicylate and Potass. Iod. treatment. He continued to grow worse, and afterwards went to Bath and took a course of fifteen baths. Salicylates, &c.

The disease continued to make rather rapid progress, and from Bath he returned to London, to enquire whether the Pyonex Treatment might, perchance, be of help in his case.

He is of ordinary height and very thin, quite pale, and his expression is one of blank despair. His pain is most severe in the knees, obliging him to go up and downstairs only one step at a time. He cannot get on an omnibus, or alight from it, until it comes to a dead stop. He cannot use his arms, because of the pain in the shoulders. He has severe pain in each metacarpus, especially in the mornings. The pain in the right temporo-maxillary articulation, which is characteristic of this affection, prevents his masticating his food. The pain in the instep, ankles, and right toes prevents his using his feet except with difficulty. His fingers have no strength. He has little appetite, is very weak, and quite broken-hearted. Pain.  
Symptoms.  
Maxilla.

One could not converse with him without discovering that he was of a decidedly intelligent mind.



He spoke English naturally and without a trace of foreign accent. He stated that he had come from India with the intention of procuring medical diplomas, and afterwards returning to Bombay to practice his profession ; but now this terrible and incurable disease had attacked him, and not only ruined all his hopes of success in life, but threatened to carry him to an early grave.

I told him I thought I could help him, and that resolution, in his case, might be looked for at no distant date.

He called again, stating that he had reported my opinion to the medical men who were cognisant of his case, and that they told him to take no notice of any one who wanted to persuade him that he could be cured, as there was no remedy for the disease. He stated that his reply was, "You say you can do nothing for me yourself, and now you tell me to have nothing to do with a doctor who says he can do something for me and has cured others." His ingenious reply was somewhat amusing.

After some further conversation he was reassured, and begged me to undertake the treatment of his case. We arranged to commence operations at an early date ; and advising him of some salient points respecting his case, and some general directions as to the treatment, the course was clear.

Prognosis. The prognosis in this case was distinctly favourable. The disease was in its infancy and had not, as yet, effected any serious disorganisation in the joints.

Treatment.  
first. Treatment was commenced on May 30, 1898, by an application of the Pyonex on the back, and

followed by another on June 6, to the right leg and arm. He now expressed himself as having less pain everywhere, and feeling better in all respects. The third, fourth and fifth applications were made to the left arm, right shoulder and left shoulder, on June 21, 28 and July 4. There was a copious discharge of purulent matter after each application, and in each case the crop of pustules that appeared on the third day after the application, was followed by a second crop, which was thrown out on the fifth and sixth days. A small boil also appeared over the inner edge of the left scapula.

Second.

Third.  
Fourth.  
Fifth.

Discharge.

Second  
Crop.

The following were the improvements in the condition and symptoms of the patient up to July 8, that is, less than six weeks after the commencement of the treatment. The most manifest improvement was in the knees. The pain was so far reduced that he could go up and downstairs with alternate steps, and could enter and get off an omnibus without its coming to a stop. He could use his arms without experiencing pain in the shoulders. The maxilla was free from pain, and the power of mastication was normal. The pain in the wrists had disappeared. The pain in the right shoulder was no longer continuous. The pain in the ankles, instep and toes of the right foot had disappeared. The only remaining pains were in the right shoulder and left knee. The fingers and wrists were stronger.

Improve-  
ments.  
Knees.

Shoulders.

Wrists.

Feet.

He had a better appetite and was much toned up. The expression had completely changed, the pallor and despair were replaced by a good colour and decided animation. He had no longer the semblance of an invalid. The principal medicinal treatment

Improve-  
ments.

Medicines.

had been Angier's Petroleum Emulsion and Cascara Sagrada Cordial.

Fourteen  
applica-  
tions.

Nine applications were subsequently applied, making fourteen in all. To the right shoulder, two; to the left shoulder, three; on the right side of the spine, three; and on the left side, one. The last application was applied on August 25. He now expressed himself as having only an occasional flying pain here or there, too slight to take notice of. All

Resolution.

his limbs were quite free as regards motion. He had no more constipation, and was troubled in no way. He returned to Edinburgh to continue his medical studies.

Duration.

The duration of the treatment was a little less than three months. The applications were made as often as they could be tolerated, as the patient was anxious to lose no time. They averaged, as near as possible, one every six days.

#### RHEUMATOID ARTHRITIS.—CASE 4.

History.

A mining student, aged 23, well formed and of good colour, was working underground twelve months ago, and while perspiring was waiting for his turn at the hammer, and caught cold. Soon

Fingers.

afterwards, all the finger joints of each hand became enlarged with the fusiform swelling, which is characteristic of rheumatoid arthritis, and he had

Knees.

scarcely any power in them. The knee joints became swollen and have remained so ever since, so that instead of being able to walk naturally he was compelled to hobble. Ale and port wine exacerbate the symptoms at once.

On April 15, 1895, the Pyonex was applied to

both thighs and legs and resulted in a very copious discharge of thick yellow pus, which extended upwards on the thighs over two inches beyond the part treated. An unusually large second crop of big pustules immediately followed.

First crop.

Second crop.

In a few days afterwards the swelling in the joints had disappeared, and the knees and hands were relieved; he walked naturally, danced, and played cricket, being perfectly well.

Resolution.

The reasons for such a quick recovery appeared to be the youth and excellent constitution of the patient, and the fact of the disease not having had time to make much progress.

#### RHEUMATOID ARTHRITIS.—CASE 5.

A patient, aged 59, states that about thirty years ago he began to be troubled with pain in the great toe of the left foot. His occupation obliged him to be standing most of the day on a stone pavement, his business being that of a meat salesman.

History.  
Thirty years.

Since his first attack, which lasted about a fortnight and compelled him to remain at home, he has had one or two every year of an average duration of fifteen days each. The pain has gradually extended to the bones of the foot, and travelled to the heel.

Pain.

The right foot was similarly attacked, and by degrees both feet became so swollen and painful that he had to wear soft slippers, and walking became a painful operation. He was compelled to use two walking sticks, bend his body forwards to nearly a double, and curve the soles of the feet inwards so as to bring the weight of the body on the outside edge.

Walking.

Two sticks.

In this manner he could make his way very slowly for a short distance.

Three months.

The attacks of pain became of longer duration, so that he was at last compelled to remain at home three months at a time, and during eight weeks of this time was confined to his bed. The knees were stiff, but not painful.

The left hand was also attacked, the third joint of the index finger being painful and much swollen. The left wrist was stiff and there were occasional touches in both shoulder joints. The pain also extended down the outside of the right thigh.

Treatment abandoned.

The patient was in good circumstances and had made trial of various plans of treatment, until finding that there was no improvement he finally gave up being treated. His appetite was fair and the body by no means wasted, he had a good colour and was of a powerful build.

Feet.

In this case, the principal trouble lay in the feet. The bones and soft tissues were so swollen and painful, that he had occasionally to absent himself from his business for two or three months at a time, and year by year the symptoms were increasing in severity, so that he feared being laid aside altogether.

Tarsal bones.

There was considerable swelling of the tarsal bones, in addition to the severe œdema of the soft parts. There was also a sharp pain in the inner and outer edges of the feet, which, however, was not constant.

Prognosis.

Frankly, the patient was in a bad plight, but, notwithstanding, the prognosis was favourable, as there was no disorganisation of the joints, and the constitution was an unusually good one.

Treatment.

The first Pyonex application was applied to the



left calf and resulted in a large crop of dark-coloured pustules, while the ankle was œdematous. He reported that he had not lost a moment at his business. He could walk better on both legs, so that the benefit of the treatment had extended to the other leg also. He felt better generally, was lighter and brighter.

First application.

It is a common occurrence for rheumatoid patients to experience such an improvement after the first or second application. The rapid expulsion of a quantity of virulent acid matter from the system, is followed by a sense of great relief, and it appears to the patient that a burden has been lifted, and a sense of great weight and oppression has been removed. When it is considered that this expelled pus is part of the actual exciting cause of the disease, it is easy to account for the improving symptoms.

Note.

Six days later the second application was made to the right leg. The resulting discharge was of less quantity. He reported being laid up for two days by a slight attack, which was of a milder character and of shorter duration than those he was accustomed to, which usually lasted for several weeks. This, however, was the last attack of acute pain and laying up the patient reported having. From this time onwards, although the treatment was only resorted to at intervals, there was a gradual improvement.

Second application.

On the twelfth day a third application was made, the left leg being again selected. There was a marked diminution in the number and size of the resulting pustules.

Last attack.

The fourth application was made on the twentieth day to the chest, the object being to lessen the purulent

Third application.  
Fourth application, 20th day.

infiltration of the body, and to help in some degree to diminish the swollen nodes of the fingers.

Note.

We do not usually expect to accomplish the latter object without making various applications to the arms. But as a result of this application, the node on the last phalanx of the index finger, which was of several years' standing, and was always hard and tender to the touch, had now become soft and was diminishing in size.

Fifth application.

The fifth application was made to the left arm with a view to help the fingers, and resulted in a good discharge of matter; the interval being a week. A week later another (the sixth) application

Sixth application, 7th week.

was made to the left leg and foot, the perforations being continued all the way around the ankle joint.

Treatment varied.

In the several applications which were subsequently given to the feet, it was necessary to alter the usual method of applying them, so as to suit the idiosyncrasy of the case. Only a few perforations could be given to the small space available on the dorsum of the foot, if the usual spaces were left between them; and the effect of these would be so small, that very little progress would be made with the cure.

In rheumatism and rheumatoid arthritis.

When the feet are severely attacked by rheumatism or rheumatoid arthritis, we need, in order to dislodge the exciting cause, to apply an exceedingly active counter-irritation, and to provide a profusion of artificial pores which may serve as exits for the pus and other impurities which go to make up the exciting cause of the disease. The whole of the dorsum of the foot, the toes, and the inner and outer edges of the foot, must be literally covered by

Note.

the perforations of the instrument. Then the whole of the ground must be gone over with the treatment a second, and even a third, time, if necessary. This must not be done at the commencement of the treatment, but two or three test applications must be made and the result must be watched, the object being to prevent undue œdema. When no œdema supervenes, the number of perforations can be increased each time until a satisfactory result is obtained from each application. This variation of the applications was made in the present instance, and the results were of a satisfactory nature. In cases of pure rheumatism resolution can generally be obtained by treating the calves only. But rheumatoid arthritis is far more stubborn, and will not yield to a distal treatment, while cases of gout must by no means be handled by the overlapping treatment.

Rheumatism.  
Rheumatoid  
arthritis.

Gout.

The seventh application was made a week later, *i.e.*, the seventh week of the treatment, to the right leg and ankle, resulting in a fair discharge of pus from the leg, while the foot and leg were both swollen, and the foot had no discharge. It is a common occurrence under treatment to have no discharge, but swelling instead. The benefit is, notwithstanding, decided, as a part of the exciting cause has been expelled from the deeper tissues and entered the superficial parts, from which it is soon carried away by the circulation.

Seventh  
application.

The eighth application was given three weeks later, to the right arm. The resulting discharge of pus was most plentiful at the wrist, and on the third day after the application a second crop of pustules

Eighth  
application.

appeared, indicating that there was a high degree of purulent infiltration in the surrounding tissues and the fingers.

Four applications were given during the next seven weeks, the total time of duration of the treatment being then three months. The parts treated were the legs and ankles. There had been a permanent swelling for years around the ankles, so that the protuberance of the ankle bones was not visible, the natural form of the parts being obliterated. The swollen tarsal bones had now assumed almost their natural proportions, and the natural form and appearance of the ankles had returned. The patient also expressed himself as being able to walk much better, but he still used the two walking sticks; he stooped somewhat less; could go for a longer distance at a somewhat increased gait.

Only six applications were given during the following four months: one to the chest and the others to the legs and feet. As the patient was now less troubled by his malady, he began to grow less assiduous in the treatment, and did not make the progress he should have done. These six applications should only have extended over six weeks. The total number of applications was now eighteen, and the following changes had taken place:—

The ankles are almost natural in appearance, the swelling being scarcely perceptible.

He can bear the weight of the whole body on either foot, while the other is lifted off the floor.

He can set the feet flat on the ground, instead of having to walk on the outer edge.

Instead of having to curve the body forwards and

use two walking sticks, and hobble with difficulty a short distance, he now uses only one stick, is quite upright, and can go down steps easily; can walk a fair pace, and go a good distance with comfort. He feels much better in himself and looks remarkably well.

A few weeks later he reported having been laid up for a fortnight with a sharp attack of influenza. Influenza. An application was then made to the chest and back, and a quantity of purulent matter was expelled. A decided relief was experienced, to the depressing symptoms which followed this attack.

#### RHEUMATOID ARTHRITIS.—CASE 6.

A patient, age 21, daughter of a baronet, applied History. for advice stating that she had rheumatoid arthritis. She had no fixed pain, nor was any joint swollen or painful. She could walk well, but got tired prematurely. Several years ago she had severe arthritic pains, and had been unable to use her arms and legs with freedom. She had never felt quite well since, and was always conscious of the presence of a lurking trouble in the system. At first sight, it did not appear that she was sufficiently affected in order to recommend her to take the Pyonex Treatment, but on hearing the full history, there appeared to be sufficient reason for at least applying a test treatment, with a view to discover if there were actually present in the system a condition that could be denominated purulent infiltration.

An application was made to the chest, and the Treatment resulting discharge of purulent matter more than justified the suspicions that had been entertained.



Six applica-  
tions.

There was pus everywhere ; the colour was not dark, nor the consistence thick, but its appearance was such as to lead one to conclude that the dormant disease might reappear at any time. The back, both arms and both legs were subsequently treated, and in every case there resulted a free discharge of pus.

Relief.

The morbid condition that was complained of soon disappeared, and a renovation of health followed. The limbs became more supple, and more strength and activity were realised. The face became fuller and weight increased. The case is interesting as illustrating how a lurking disease may be cleared out of the body, although no acute symptoms are present.

#### RHEUMATIC ARTHRITIS.

Diagnostic  
symptoms.

It will suffice for our present purpose to mention the more prominent symptoms which belong to this disease, and by which it may be classed as separate from rheumatoid arthritis.

Sequel.

It is looked for as a sequel to rheumatism, and not debility.

Joints

The joints only are effected, there being a marked absence of constitutional symptoms.

It does not terminate in osteo-arthritis.

Maxillæ.

It does not attack the temporo-maxillary joint, nor equally attack the joints on each side of the body.

Serum  
effusion

The joints become abruptly enlarged, and are not fusiform or accompanied by effusion of serum.

Deflection.

It is not accompanied by the ulnar deflection, or the turning outwards of the feet.

Acid.

It is not characterised by the acid sweat, or tingling, numbness or headache.

The heart does not always escape, but may be <sup>Heart.</sup> invaded, though the pulse may not be very rapid.

Its attacks usually come on after the attainment of <sup>Age.</sup> the middle of life; and the atrophy is not marked until the development of the later stages of the disease.

The pain is duller and not of such an acute and <sup>Pain.</sup> cutting nature. The attacks are not so violent as a rule, and there is more tendency to become sub-acute.

It may be treated on the same lines as rheumatoid <sup>Treatment.</sup> arthritis.

#### RHEUMATOID ARTHRITIS, ASSOCIATED WITH RHEUMATOID IRITIS.—CASE 7.

A gentleman, aged 28, applied for advice, stating <sup>History.</sup> that he had been suffering from rheumatoid arthritis for seven years. He had been accustomed to take long rides daily, in very cold weather, insufficiently clad, and was attacked by rheumatic fever, and subsequently arthritis in every part. The joints were not swollen, but the pains were severe, although he could walk fairly well. He resided in London, and each winter, as the cold became severe, he was attacked by rheumatic iritis and laid up for some <sup>Iritis.</sup> months, having to keep his bed much of the time. Last winter the attack was very severe, and the right eye became so bad that his doctor advised him to have it out. A specialist, however, was called, <sup>Enuclea-  
tion  
advised.</sup> and ordered him to have it bathed night and day, every ten minutes, with water as hot as could be borne. This was done for forty-eight hours and the eye was saved. The left eye was less inflamed and

	also recovered. But each winter the iritis was more severe than the preceding one, and he much dreaded the approach of the cold weather, on account of the
Danger.	danger of losing his sight ; also the return of the
Egypt.	sharp arthritic pains. He took a trip to Egypt, and remained there some time, but returned in a worse condition after having suffered much discomfort. After resting from this trip for three or four weeks, he applied for advice.
Treatment. Twenty-four applications.	He was under the Pyonex Treatment for three months, during which time twenty-four applications were made in turn to nearly every part. The
Discharge.	purulent discharge from every application was copious, and furnished proof that the system was invaded by the disease to a greater extent than I had anticipated,
Treatment. Improvement.	there being no symptoms by which the actual infiltration of the system could be ascertained. He improved from week to week. The arthritic pains, which were not severe, steadily diminished, and he was able to take exercise and climb the rocks on the coasts with impunity.
Impending danger.	But the impending danger of the return of another attack of iritis, with the cold weather, was constantly kept in view ; and in order to effect the greatest possible revulsion of purulent products from the tissues of the orbits, no less than six out of the twenty-four applications were made to the neck, throat, shoulders and chest. The first three of these
Diminution of pus.	produced pus freely, but the quantity as well as the colour waned during the last three, thereby furnishing a strong indication that the tissues were resuming a healthy condition. I told him that I did not anticipate that there would be any return of the iritis, or should

there be any, it would in all probability be insignificant. He spent most of his time motoring during the treatment, and he motored from town and back, between three and four hundred miles each way, which of itself was a severe exercise of the sight. The following winter was of exceptional severity, and there was abundant opportunity for practically testing whether the anticipated benefits of the Pyonex Treatment would be realised. In the following Resolution. March I received advice to the effect that he had passed the winter in excellent health, and without the smallest sign of the dreaded iritis.

RHEUMATOID ARTHRITIS.—CASE 8. A REMARKABLE  
CASE.

History.

A lady, aged 58, was attacked nine years ago by severe prostration of the whole system, and was confined to her bed for six weeks. After getting up, the right index finger was attacked by pain and swelling in the middle joint. The elbows, shoulders, lower extremities, and feet soon followed. The fingers of both hands are distorted and rigid, and there is considerable loss of motion in the elbows, shoulders, knees and ankles. She is able to walk very little, only 50 or 100 yards at a time. There is marked emaciation of the body and general weakness. She has visited Matlock Bath for several weeks, but failed to receive any benefit.

The patient resided at a distance of fourteen miles, and could only be seen occasionally. Five Pyonex Treatment. Treatments were applied during nine weeks. The parts treated being the back, chest, arms, and lower

Improve-  
ment.

extremities. From week to week, a marked improvement was manifested in the increased power of motion in the hands. The walking powers were also improved. Owing to my leaving the neighbourhood, the treatment was discontinued.

Bacilli  
expelled.

But the case is principally interesting in consequence of the remarkable character of the discharge which resulted from the Pyonex Treatment. Very little pus was expelled, but my attention was drawn to an immense number of minute organisms, which were expelled from the chest, back, and other parts. The patient stated that for some years past they had been coming out, and that it was awful to have such things in her body. She also wished for information as to what they were. They could be picked off from the skin with the thumb and finger, and their expulsion was accompanied by intense itching. The applications of the Pyonex greatly increased the number which was expelled. Several of these were collected and placed in a small phial; and on submitting them to examination under the microscope, I discovered that they were all well-developed colonies of a bacillus, which was identical in appearance to the anthrax bacillus.

Well-  
developed  
colonies.

Exciting  
cause.

Owing to the scores of these colonies which were thrust out after each application of the Pyonex, it was evident that the whole system was charged with them, and there appeared to be no reason to doubt that the morbid condition of the joints was due to the toxic emanations from these bacilli. This fact also leads us to the reasonable conclusion that although the exciting cause of rheumatoid arthritis, according to the discovery of Triboulet, has been



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fairly proved to be specific micrococcus, the affection may, in exceptional instances, owe its origin to a bacillus of the anthrax type. The dissimilarity of the discharge to its usual purulent character in rheumatoid arthritis, would appear to furnish a strong reason for suspecting that the exciting cause was not of the usual kind. And while we contemplate the fact that there may be myriads of these minute vegetable organisms which, owing to this branch of science being in its infancy, may yet be undiscovered, there appears to be insufficient ground for a valid objection to such a hypothesis.

## SECTION II.

### CHAPTER XII.

#### *DISEASES OF THE CUTANEOUS SYSTEM.*

##### 1. Etiology. 2. Effects of the Pyonex Treatment—15 Cases.

ECZEMA.  
IMPETIGO.  
LICHEN RUBER.  
LUPUS ERYTHEMATOSUS.  
LUPUS EXEDENS.  
MELANITIS.  
PSORIASIS.  
URTICARIA.

#### SKIN DISEASES.

- (1) Etiology.
- (2) Effects of the Pyonex Treatment.  
Fifteen Cases.

Etiology. THOSE diseases of the skin which have a marked tendency to frequent recurrence, and are of long duration, may safely be considered as being due to the presence of morbid impurities in the system. It is beneath our consideration to suppose that the various kinds of eruptions which characterise them may be thrown out from perfectly pure blood and tissues.

Each disease has its own exciting cause. In our allusions to febrile affections we notice the fact that one kind of blood poison produces typhus, while another causes small pox, and another

results in ague; and, in fact, that every kind of fever has its specific exciting cause. The same rule may be considered to apply to the production of skin diseases. One kind of blood impurity produces eczema, while another causes psoriasis, and a third results in herpes zoster; every kind of skin disease being caused by its specific blood impurity, which may be alluded to as its exciting cause.

A most persistent symptom that presents itself during the general treatment of many skin diseases is their tendency to recur. Whatever combination of medicines be administered internally, whatever change of diet or climate be adopted, it is often next to impossible to eradicate the predisposition of the disease to recur. In fact, many of the ordinary methods of dealing with this class of affections may, to a large extent, be considered as palliative.

Persistent  
symptom.

Intractable  
to treat-  
ment.

Some idea may be formed, for instance, of the unyielding nature of eczema to medicinal treatment, when it is stated in a standard work on skin diseases, that more than fifty distinct medicines are mentioned which are deemed to be of service in the cure of this disease alone.

Fifty  
distinct  
medicines.

One writer of celebrity on this subject has stated, to quote his own words: "It has been my most ardent wish, the stimulus of all my studies, to cure chronic cutaneous diseases as quickly as possible, and yet, to my most sincere sorrow, I have never succeeded, in spite of the use of all possible means, internally and externally, in curing such a disease, suddenly or even quickly." It does one good to read such a frank acknowledgment, and we can sympathise with every word of it. We would respectfully

Quotation.

Trial of  
Pyonex,  
&c., recom-  
mended.

recommend this author, and all who have had a similar experience, to make a thorough trial of the eliminative powers of the Pyonex. We are strongly of opinion that he would, by so doing, realise, to a considerable extent, his most ardent wish.

Wrong  
stand-  
point.

The fact of such disappointing results being realised, after such intense application to the subject, would appear to indicate that the basis of action was laid from a wrong standpoint. Had these efforts been devoted to the elimination from the system of the exciting cause of these affections, there is ground for believing that his efforts would have reaped a better reward.

Fungi  
a cause.

It has been discovered that some cutaneous diseases are caused by fungi; as, for example, pityriasis, herpes and favus, which owe their origin to a fungus which is identical in appearance to the *oïdium lactis*. The toxins which are given off from such morbid fungi are doubtless responsible for the skin affections. And the fact that the three above-mentioned diseases so materially differentiate from each other is a satisfactory proof that the fungi in question, although possessing a similar morphological character, vary in the sub-class to which they appertain.

Etiology.

Whether other forms of skin eruptions are caused by fungi or bacteria is, as yet, questionable. But there can be no doubt that the symptoms which are characteristic of many of them, afford strong reason for coming to such a conclusion. Whether they be micrococci or bacilli, or both, are points for which we still look for a satisfactory solution. But the manner in which the causative toxins are continuously

Bacterial  
origin.

reproduced in the system, so as to prolong the life of the morbid efflorescences for so many months or years, leave us no choice but to conclude that their constant multiplication is due to a micro-organism of bacterial or other origin.

In typical cases of certain skin diseases the symptoms which are prominent, during the period of this exciting cause, and the development of the disease, are analogous to those which are caused by the blood poisons, which constitute the exciting cause of the more serious types of the exanthemata. In acute eczema, for instance, there is loss of appetite, nausea, and a decided disinclination for either physical or mental exertion; there are also chills and febrile symptoms, while in the case of infants there may be delirium.

Analogous  
symptoms.

Acute  
eczema.

Owing to the similarity which exists in so many of such symptoms, which precede various kinds of ailments, it is often impossible to form a prognosis as to what ailment may supervene.

Prognosis.

But we may safely conclude that there is present in the system a morbid exciting cause, which, if allowed to remain, will not fail to vent all its deleterious effects on the patient.

Etiology.

The appearance of a cutaneous disease on the surface of the body, may be compared to the fruit of a seed which is sown in the earth. In the one case we have the earth or soil, the seed, and the plant; while in the other we have the tissues, the exciting cause, and the skin disease.

Com-  
parison.

The tissues are as the earth or soil, the exciting cause is as the seed sown in it, and the efflorescent



growth which appears on the skin is the plant which springs from the seed.

Reason for  
non-  
success.

The apparent reason why Dermatologists have met with such adverse conditions while endeavouring to successfully combat cutaneous affections, has been that their exciting cause has remained in the system, and has constantly reproduced its effect in pustules, efflorescences, scales, or some other kind of growth; while the remedial agents employed have not been able to destroy these growths, nor expel from the system the exciting cause, which has been the root whence all the trouble proceeded.

Example  
of horse  
radish.

While a piece of horse-radish root remains in a garden bed it is impossible to rid that bed of the plant. It will keep springing up as long as a vestige of the root remains; and the only way to rid the bed of the plant is to clean out of the soil every particle of the offending root. In like manner the obviously successful plan for dealing with obstinate skin diseases, is to strike at the root of the evil and clean it out.

Etiology.

Action of  
Pyonex  
Treatment.

When employing the Pyonex Treatment for the purpose of alleviating diseases of the skin, we immediately commence to wage war against the exciting cause. The methods we employ enable the natural forces to expel from the system the cause of all the trouble, and this being done the system resumes the conditions of health.

In the  
exanthema.

In the case of exanthematous fevers of the severer types, the natural forces either succeed in expelling the virulent exciting cause, or it remains in the system. If the natural forces are unequal to the task of expulsion, the patient sinks from the toxic effects. But

if the excess of the exciting cause be expelled, the symptoms pass away and recovery sets in.

So with the skin disease; if the exciting cause be expelled from the system, the seed from which the morbid plant would grow no longer exists. But as long as the seed remains in its congenial soil it will not cease to sprout, and the skin disease is the result.

### EFFECTS OF THE PYONEX TREATMENT.

The effects of the Pyonex Treatment in skin diseases are such as to materially assist in the alleviation of the symptoms. It is not a matter of great import whether the affection is of a recent or chronic nature, nor can we say that there is any great difference in our results, whether we are treating one or another type of this class. While the medicinal treatment is always regulated according to the exigencies of each case, we are, as far as concerns the Pyonex Treatment, centering our attention on the attainment of results, which are the peculiar office of the Pyonex to accomplish. We are, in fact, looking for the system to throw out a purulent discharge, which, owing to the sequence of the symptoms, we may be able to recognise as the exciting cause of the specific ailment under treatment.

Having once ascertained the exact classification of the cutaneous affection that we are about to treat, not only do we look for a purulent discharge, but we expect this discharge to display certain characteristics which appertain only to this particular affection. We also expect to witness the accom-

plishment of certain changes in the course of the symptoms, and that these changes will be in proportion to the quantity of the discharge.

In eczema.

If, for instance, we are treating eczema, we expect a discharge of a light yellow colour. If the case is a severe one, we expect the discharge to be abundant, and that a second crop of pustules will be expelled as soon as the first crop is disappearing. If the case is very chronic, and the patient has been in a low condition for several years, we shall not be surprised at the discharge being of a most offensive and putrescent character. *Pari passu* with the flow of so much purulent matter to the spot where we have applied our treatment, and with the diminution of its store in the tissues, we expect to witness an immediate change of the pustular condition of the face and the integument in other affected parts.

In psoriasis.

When treating a case of psoriasis, we look for a discharge of another hue. Now we expect a great gathering of bright yellow pustules, and as these mature and dry up we expect to see the silvery scales first become loose and then fall off. We have extracted from the system the element on which their strength and life depended, and they rapidly wither and die.

In pustular eczema.

In the case of pustular eczema the natural forces are all the time at work, endeavouring to expel the pus in those parts where the skin offers the least resistance. The effect of the Pyonex Treatment is to divert the stream from the face and turn it to the artificial pores, where it can be thrown out with comparative ease and increased quantity. But in

In psoriasis, the case of psoriasis there appears to be no effort

on the part of the system to rid itself of the exciting cause which is making such havoc with the patient. The natural forces appear to be unable to move in the matter, until a channel is provided, whereby the toxic impurities may be guided to some part of the cutaneous envelope that surrounds the human frame; and, in addition to this, a stimulus imparted to the weakened body, which may be sufficient to supply all the required power, to thrust out the offending toxins.

Non-expulsion of exciting cause, until help is provided.

Happily, the artificial pores and the stimulating oil now come to the rescue, and exactly fit in the case and supply the lack that is felt. This being accomplished, how readily does the system respond and bring all its powers to bear, so as to drive out this internal foe that destroys its peace and upsets the proper functions of its constituent parts. The whole frame seems to respond, as if it were thankful for the new opportunity afforded to it. The toxic pus is quickly dislodged from its lurking places and strongholds, and conveyed to the artificial pores, which remain sufficiently open to allow it to pass out of the body in the form of pustular eruptions, which dry up and fall off.

The war against this destroyer of the peace being waged successfully, recovery sets in and health quickly returns.

We now take a glance at the effects produced by the Pyonex Treatment in some of the commoner forms of skin disease.

In the pustular forms of eczema, after one or two Pyonex Treatments have been applied, the pustules begin to weaken. Those that are partly

In pustular eczema.

formed, and can be felt as indurated bodies beneath the cuticle, do not mature, but gradually diminish in size until they are imperceptible. The fresh pustules that form are few in number, one here and one there, until they cease altogether to appear.

The pus  
diverted.

As the pus is rapidly drawn to the spot where the treatment is applied, so the face, which is a favourite locality for its expulsion, soon ceases to serve as such, and the complexion becomes clear. The symptoms of weariness and malaise soon subside, and good spirits return. In women the uterine functions improve, and amenorrhœa and dysmenorrhœa give way to a natural and healthy flow, and a general improvement in health. The time necessary to effect a cure depends on the nature of the case. But the improving symptoms appear early.

The  
discharge.

The discharge is usually copious, especially at the commencement of the treatment, and in exceptionally severe cases of long standing, may be of a decidedly offensive character.

Swelling.

When there is a tendency to the occasional swelling of the limb, this disappears, also the red patches quickly lose their colour and vanish.

In  
Impetigo.

In impetigo, the applications are followed by a free expulsion of pus. The formation of the bursting pustules soon ceases, and a marked improvement takes place in the health.

In  
psoriasis.

A pus of a bright yellow colour, quite different in appearance to that of eczema and other affections, is thrown out in immense numbers of pustules, which are not usually confluent, but appear in successive crops. When the eruption is cone-shaped



and elevated in scabs, these soon fall off and the skin heals.

The silver scales on the elbows, knees and other parts, soon begin to loosen and fall off. The copper colour wanes, and the skin resumes its natural colour.

The silver scales.

The low state of health, which is a usual accompaniment to this affection, always gives way to a marked improvement as soon as a good expulsion of purulent matter has been effected. We gather therefrom that

the toxins which are producing the skin disease are directly responsible for the symptoms of the cachexia.

Toxins responsible.

And it may in fact be noticed that in nearly all cases of severe cutaneous affections, there is a perceptible lack of sound health. This, however, always disappears as the pus is expelled.

When a case of lupus exedens is treated by the Pyonex, the scarlet colour soon commences to fade, and the epidermis, corium and connective tissues, which have been destroyed, are reproduced. The suppurating edge, which is constantly extending, gradually becomes dry, and its progress is arrested. The healing process then sets in, and the entire circumference becomes covered with new skin. The improvement begins at the centre of the bare surface of the tissues which have been destroyed, and spreads to the circumference. As the marginal edge harbours the pus which is always re-forming, and is usually in a state of subacute inflammation, it is the last part to yield to the healing process.

Lupus Exedens.

In lupus erythematosus the purple inflamed cuticle loses its colour, and the purulent streaks dry up and disappear.

Lupus erythematosus.

In many other varieties of skin affections, the

course which is run during the treatment is very similar. As soon as the discharge of the offending pus is well established, the strength of the disease is broken, and recovery sets in.

Contra-  
indication.

If the treatment be applied in cases where the disease is superficial, and not dependent on purulent infiltration, it is quickly discovered that it produces no benefit, as no discharge results.

#### REMARKS.

Medicinal  
treatment.

The medicinal treatment adopted in the foregoing cases has not been alluded to, as each practitioner will observe his own mind as to the medicines that may be required in any case that he may treat.

Transient  
attacks.

Nor have we occasion to make reference to transient attacks of cutaneous affections which readily yield to medicinal treatment, and afterwards give no further trouble. But any affection of this class which becomes chronic and, notwithstanding every effort to subdue it, still persists in spreading, and may threaten to prove fatal, calls for our consideration as to whether we are not justified in applying the Pyonex, with a view to bring relief to the sufferer.

Chronic  
cases.

Herpes  
Zoster.

Amongst those we may mention are, for example, herpes zoster or shingles, which may prove fatal ;

Pemphigus.

pemphigus, which is rare, and amenable to no treatment ; pityriasis rubra, which, if relieved, is characterised by constant relapses. Also the purple papular eruption known as lichen ruber.

Lichen  
Ruber.

In such affections there is usually some degree of constitutional disturbance. Their exciting causes invade the tissues, as shown by prominent symptoms.

Caused by  
bacteria.

It is almost certain that many of these toxic

elements are the productions of bacteria which have not yet been discovered; as there is no other satisfactory way to account for their effects. But on the assumption that these are bacterial toxins, the changing conditions, the occasional attacks and other symptoms, are easily understood.

Bacterial  
toxins.

These affections are commonly attended by malaise, headache, loss of appetite, restlessness, inactivity, and a disrelish for any effort of mind or body. Not uncommonly the functions of the stomach, liver, and other viscera are defective. Whenever we meet with a train of symptoms of this kind, we may conclude that there are morbid elements or disease germs in the system, of a more or less toxic nature. Any doubts hereon are cleared up by the copious discharge of pus that results from an application of the Pyonex.

Symptoms.

Conclusion.

On applying the Pyonex in such cases, we make the application as extensive as the condition of the patient will admit of. As a rule we cover the chest and back, in turns, with the perforations of the instrument, and thereby convert the cutaneous envelope, as it were, into a sieve, containing thousands of minute openings, which serve as so many exits for the morbid products.

The  
application.

The system immediately avails itself of this opportunity, and improved symptoms follow the purulent discharge. The character of this pus always bears an analogy to the nature of the disease; the more virulent cases being characterised by a more intensely coloured and thick pus, while milder cases are indicated by a pus of a lighter colour and greater fluidity.

Results.

Severe and  
mild cases.

The eruption.

The eruption quickly runs through its papular and vesicular stages, and in forty-eight or more hours the mature pustule appears.

Our indication.

Our indication appears to be to use the Pyonex in those skin diseases which resist ordinary treatment, and in which we have reason to believe that the disease is caused by a tissue toxin : and to continue the applications at intervals of a few days, until the quantity of pus expelled is so small that we are satisfied that the system is cleansed from morbid products.

### ECZEMA.

Eczema is a skin disease, which is more frequently met with than any other which we have to consider ; averaging about 25 per cent. of all skin diseases.

Symptoms.

It commences with reddened patches of skin, from which an eruption is thrown out, which consists of vesicles, papules, or pustules. These are accompanied by a burning heat and itching. The cuticle becomes infiltrated, and an exudation of serum takes place. As the vesicles dry up, scales or crusts are formed which are readily detached. On taking a fold of the infiltrated skin between the finger and thumb, it is found to be much thicker than the healthy skin.

Exudation.

The exudation is due to the rupture of the pustules, or vesicles, and may consist of pus or serum. When the eruption consists mainly of bursting pustules, it is often designated impetigo.

Impetigo.

Various kinds.

There are various terms used to denote the several kinds of this disease, such as eczema, vesiculosum, pustulosum, papulosum, erythematosum, &c.

When the eruption is very abundant, the glands in its immediate neighbourhood may become swollen, owing to the absorption of the morbid elements, which constitute the exciting cause of the disease. Glands.

Eczema may be caused by a chlorotic or anæmic state of the system, as also by the functional derangement of the stomach, liver or kidneys. Constipation, sedentary habits, the gouty and rheumatic diatheses, are also among the predisposing causes. Etiology.

It may also supervene on the sudden subsidence of other diseases, as asthma, or measles.

When the system is supercharged with a blood impurity which constitutes the exciting cause of eczema, almost any irregularity suffices to produce the disease, *e.g.*, severe heat, cold, the continued action of water, acids, or irritating substances, as stimulating liniments. When easily produced.

If the eruption disappear under ordinary treatment, it is liable to reappear at any moment, owing to the fact that the exciting cause has for the time simply been combated, and not expelled from the system. Recurrence.

When the pyonex is applied to a patient suffering from eczema, it is followed by a copious expulsion of pus, of a dull yellow colour. In cases of short duration, one or two applications may suffice to eradicate the disease, but if it has continued for years, longer treatment may be necessary. The applications may be made on the back, chest and abdomen, and be repeated at intervals of a few days, until the resulting discharge is of small quantity. Recent cases.

The term eczema, which is derived from the Greek *έκζεω*, to boil over, is somewhat expressive Applications.

Derivation.



of the causation of its chronic form, in which we are especially interested. Such of the acute varieties as are referable to specific causes, may as a rule be relieved by the removal of such causes, and the  
Persistence. adoption of judicious medical treatment. But chronic forms, which are due to blood impurities, or a morbid state of the internal organs and muscular tissues, often persist for years, in spite of remedial measures.

Periodical attacks. The chronic forms may produce periodical attacks, the interval between them being of varying length. The health of the patient is affected as the period of eruption approaches. After the attack, the system is relieved and the more troublesome symptoms disappear. But certain effects remain, and last, until

The cause. the appearance of another exacerbation. The cause of the reappearance of these exacerbations, as well as the persistence of the complaint, is analogous to the repeated attacks of intermittent fever, and is due to the presence in the system of toxins, which are not of a sufficiently poisonous character to produce a violent fever, such as typhoid, for example, by which it might be consumed, or be otherwise eliminated ; but it is sufficiently toxicant to keep the patient in an indifferent state of health.

Toxin propagation.

The propagation of these toxins goes on uninterruptedly until they reach the boiling-over point, when a part of them is forced out through the skin, by an effort of nature to get rid of them. But a sufficient quantity of the virus remains in the system to enable the insidious propagation to be continued, so that another attack is bound to take place.

Treatment.

Since there is a specific cause, which infiltrates the tissues and produces the disease, the obvious

end to be kept in view in the treatment is, if possible, to expel this foreign element from the system. If we succeed in effecting this, not only are the symptoms of the affection subdued, but may be considered as radically cured.

On applying the pyonex to the back, chest, or abdomen in such cases, we must be prepared to witness the expulsion of a surprising quantity of pus. It so pours out, that the thirty-three pores made by each tap of the instrument become so filled, that they may be converted into one general sac of pus. Not only so, but the spaces between the perforations may be covered with pustules. A second crop of large isolated pustules commonly appear four or five days after the application. Expulsion.

With rare exceptions, the eczema rapidly wanes and disappears in a few days or weeks. Very stubborn cases require longer time. The applications are made at intervals of from seven to ten days. The quantity of pus expelled will diminish as the applications are continued. Usually an improvement sets in, in the general health, a few days after the first application, which steadily continues until there is complete restoration. Prognosis.  
General health.

#### CASE I.

A female patient, aged 57, had eczema for five years. It commenced on the right wrist, and was much aggravated after washing. Gradually both arms became covered with a red rash, and at times they were swollen to twice their natural size, and had to be kept in slings for days, until the swelling went down. She has not been able to wash clothes for Eczema.

five years. During the last six months a red patch has appeared above the right knee. Walking, especially in warm weather, aggravates the complaint, as does also carrying a basket. After walking, or making any decided effort, she is unfit for any work and is compelled to rest.

First  
treatment.

Treatment was commenced by an application on the left arm, which resulted in a copious discharge of thick, light-coloured pus. The pustules were confluent in several places. The treatment caused the arm and wrist to become somewhat swollen. Six days later, the right arm was treated, a similar discharge of pus resulting. The left arm has now barely a trace of the disease, and the right arm is much better. She feels better in herself.

Second.

Ten  
applica-  
tions.

During the next eight weeks five applications were given to each arm. The condition of the patient was now most satisfactory. She was able to resume all her occupations and suffered no more from the affection.

## CASE 2.

History  
and  
symptoms.

A patient, the Hon. —, applied for advice, age 56. During nearly the whole of his life he had been troubled with eczema, which incessantly appeared in nearly every part of the frame. He had quite despaired of ever being relieved, and had got at last to consider it as a necessary evil which not only troubled him, but other members of his family. The eczema toxin had been continuously increasing in the system, and of late years had very severely attacked both lower extremities. The integument which covered the calves was constantly

Eczema  
toxin.

bursting, and a sanious discharge resulted which lasted various lengths of time, from three or four, to twenty or more days, while the accompanying irritation was most annoying. As not unfrequently happens in kindred cases, when a given toxin has been steadily increasing in the system until every tissue is invaded, and one or more of the internal organs is attacked by the subtle virus, it so happened in the present case. Its invasion of the coats of the stomach had for several years produced a troublesome dyspepsia. Also the intestines were so attacked that the natural contractility of the muscular coat, became totally unbalanced owing to the constant irritation which was set up by the toxin. As a result of this the patient had suffered from a running diarrhœa during several years. There had been three or four discharges daily. Any unusual efforts of mind or body produced a discharge, and the resulting effects on the system were of a decidedly lowering character.

Sanious  
discharge.

Toxin.

Stomach.

Intestines.

Chronic  
diarrhœa.

The diagnosis of the case was that relief could only be obtained by effecting the expulsion of the offending eczema toxin from the system; and the patient was advised that on the accomplishment of this, not only the eczema, but also the dyspeptic and choleraic symptoms would in all probability disappear.

Diagnosis.

Considering that the constant actions of the intestines were the most annoying symptom, the treatment was commenced by an application over the abdomen. The pus which was discharged was of a whitish colour and not very abundant. But the action of the bowels was completely suspended for about forty hours. On the third and fourth days,

First  
application.

Note.

however, their activity was abnormally increased and the patient stated that the treatment had done him no good. Such remarks are not uncommon in the incipient stages of the treatment, but the invariable rule may be here quoted ; that when a discharge of purulent matter follows the application of the Pyonex, it may be considered as certain that beneficial results will be obtained ; and any disturbing symptoms that may appear during the operation of the treatment should be disregarded. The treatment of this case lasted only nineteen days, the patient not having a longer time at his disposal. Three applications in all were made to the abdomen, and one application to each calf. The resulting discharge from the lower extremities was somewhat abundant, being greater in quantity and more solid than that from the abdomen.

Improvements.

The condition of the patient much improved. The diarrhœa disappeared, also the dyspepsia, and the eczema. The features, which had been decidedly drawn, became fuller, and had a better colour. He was enabled to enjoy his meals and he stated that he felt much better. Eight months later a report was received to the effect that he continued well. Being a Canon in the Church of England he is now enabled to accomplish his arduous duties with comparative comfort.

### ECZEMA PUSTULOSUM.

#### CASE 3.

History and symptoms.

A young woman, aged 20, came, who was employed as a model to try on jackets, &c., in a dry goods house. She had a fine figure, stylish carriage,



and good features. But she was more than mortified at the sad state of her face. Such unsightly crops of pustules made their appearance, that it bore more resemblance to the roughness of a Turkish towel, than the ordinary complexion. She complained also of other symptoms, such as weakness and pains, and also of being much tired out at bed time. She said, "Oh, I would have slices cut out of my back, if it would only take away those pimples from my face."

The origin of her trouble was that some three years previously, she had several attacks of intermittent fever and her health had never been good since. The eczema was the result of the malarial poison, which still remained in the system. Etiology.

The Pyonex Treatment was applied over the back and chest. She felt the working of the expulsive process plainly and the following morning her face was somewhat blanched, but she was still ready for business. A quantity of purulent matter was expelled from the system, and within a week every pustule had disappeared, and her complexion was as clear as that of a newly born babe. Her general health also improved, as far as regarded her strength and spirits; there was no more weariness or lassitude. One application sufficed to complete the cure. Treatment.

#### CASE 4.

A lady, aged 23, an expert professional pianist, whose only occupation was to play at concerts, had the mortification for years of being a victim to pustular eczema, which attacked one side of the neck and shoulder. As she was constantly before the History.  
Neck.

public in a low dress, the eczema was brought into full view, and dreadfully marred a neck and shoulder of such exquisite form, as were never equalled by the most perfectly executed statue in marble. Of course, all sorts of methods had been tried, but it was so stubborn that it resisted everything. She was thankful for the encouragement held out to her, of probable relief by means of the Pyonex Treatment.

**Treatment.** An application was made over the chest and back, being confined to the integument which was below the line of the low concert dress. A moderate discharge resulted on the third day, and there was also a marked diminution in the size and colour of the pustules, which were scattered over the neck and shoulder. A week later a second application was made on the same parts, resulting in a smaller discharge. The eczema, which was barely noticeable at the time of making the second application, rapidly waned, and in a few days disappeared altogether, leaving the skin quite white and without the semblance of a mark. One application would probably have sufficed, had it been possible to apply the treatment in the exact locality of the affection.

#### CASE 5.

**History.** A Cuban, who had for years been afflicted with pustules on the face, applied for treatment. The pustules, which were constantly coming out, as a rule remained for about a week. Many of them were of large size, and would take three or four days to mature, and longer to disappear. Some were so deep as to leave permanent marks. He was ashamed

to go into society, as he had the appearance of one who was suffering from a contagious disease.

An application of the Pyonex was made on the back and chest. The resulting discharge on the third day after, was of small quantity. The matter was expelled in very small pustules ; the operation of the treatment in the system was not perceived, nor was the drying up of the pustules. The face was partly covered with pustules at the time of the application of the treatment, some of which were mature, while others were in course of formation, having an indurated, inflamed base. All of these disappeared in two or three days. The skin of the face became clearer and whiter. The unnatural dark shade disappeared. He expressed himself as feeling full of life and activity, in contradistinction to a previous heaviness. When he used to get out of bed, he would sit down, and begin to stare vacantly, while thinking of nothing, but he now had all his wits about him. One application sufficed for the completion of the cure, which was permanent. The character of the discharge in this case was decidedly toxicant, but not of the usual purulent description.

Treatment.

Small discharge.

Relieved by one application.

## ECZEMA PAPULOSUM AND INFLAMED EYES.

### CASE 6.

This was a case in which a child, aged 6, had been afflicted for twelve months with inflammation of the eyes, in consequence of eczema. He could not look up, nor was he able to bear the light. He remained in the bedroom all the day and kept his head buried in the bedclothes. The integument over the brows,

History.

Eyes.

the lids, as well as the infra-orbital muscular tissue, was considerably swollen and inflamed. The superficial arteries of the conjunctiva were injected. There was a constant discharge between the lids, which glued them together every morning. The forehead and face were covered with small papules, having the appearance of miliaria.

First  
treatment.

The first application of the Pyonex was made on the chest, and resulted in an unusual discharge of yellow purulent matter, considering the tender years of the subject. On the fourth day he was able to

Second.

open his eyes, but could not look up. After the second application, which produced a second crop of pustules, the inflammation and swelling subsided from the eyes and adjacent tissues, and he was able

Third.

to look up, but only for a moment. A third application completed the cure. All the eczema disappeared and the sight was perfectly restored.

Pathology.

The case is interesting as showing the efforts made by the system to get rid of the local morbid element by the two ways which were available. The one, the expulsion of the successive crops of pustules on the forehead and face, and the other, the continuous discharge of matter between the lids, which was uninterrupted until they became so adherent as to preclude its further exit. During a period of twelve months this had been going on; the eyes and their

Diffuse  
purulent  
infiltration.

surrounding tissues were so invaded by diffuse purulent infiltration that it had become a disease. Fresh pus was formed in the parts as fast as it was expelled. The unaided natural forces were unable to do more than to get rid of this overflow of morbid matter, while a sufficient store remained behind, to

keep the affected parts in a swollen and inflamed state. But as soon as an adequate outlet was provided by the application of the Pyonex, the whole of the purulent matter was rapidly expelled, and the affected parts resumed their normal condition of health. Duration of treatment, three weeks. Outlet.

### IMPETIGO.

#### CASE 7.

A patient, aged 34, states that about fourteen years ago, pimples containing matter began to appear on his face and the back of the neck, and with intervals of three or four months, he has had them ever since. Sometimes they are watery and at others pustular, they last two or three days and end by bursting. At the time of his applying, there were several on the face and neck, some being of large size. The countenance was terribly disfigured by the unsightly scabs which resulted from the bursting pustules. He has never ceased being medically treated, while residing in many parts of England. Of late the pustules have much increased in size, obliging him to cover them with plaster. He complains of pains in the back and loins, also of headaches and lassitude, which he thinks are due to the changes of weather. History.

July 13, and July 20, the back and chest were treated, and a quantity of yellow pus was thrown out. Large  
pustules

July 30, all the pustules have disappeared from the face and neck. A boil with a core has appeared on the right side of the nose, which discharges thick First  
treatment.

Second.



Third. pus. An application was now made to the back and chest, producing a thick yellow discharge.

Fourth. August 30. Another application was made to the back and chest. Reports decided improvement in general health. Feels no more dulness or lassitude on waking, or during the day, and has no more headaches.

Four months later, reports continuing in good health, and has not seen a pustule for nearly six months. Number of applications four; duration of treatment, seven weeks.

Seven weeks.

### LICHEN RUBER.

#### CASE 8.

History. A lady, aged 18, the Hon. Miss —, applied for treatment. Her mother, Lady —, stated that from the time she was 6 weeks old, spots began to appear, on the backs of the hands, the chest, the arms and knees. They gradually developed into large, oval, velvety patches, rough and very irritating. The larger patches were on the inside of the thighs, just above the knees, and these were the most troublesome. Their colour became darker until they were purple. A part of the face and nearly the whole of the back of the neck was covered, also the arms, forearms and back had several patches. The affection was of an irritating character and affected the health and comfort. All such remedial measures as could be sought out, proved of no avail to give even temporary relief. The patient was to be presented at Court in about four weeks, and it was much desired that the eczematous spots might if possible

Oval patches.

be got rid of, before the presentation. It was explained that in all probability this might be accomplished, although the available time for treatment was only twenty-one days. But it would be impossible to eradicate the disease from the system in this time. The virus which constituted the exciting cause pervaded every part of the system, and every part would have to be effectually cleared out before the complete eradication could be accomplished.

Five applications were got in during the short time at our disposal. The first on the chest. The second and third on the right and left calves. The fourth on the chest, and the last on the back. The discharge to begin with was light yellow, and afterwards, an intense yellow. This change of shade is not uncommon in the progress of the Pyonex Treatment, the darker colour being apparently due to the pus which is expelled from the deeper tissues. This pus was undoubtedly the exciting cause of the affection. After the first application there was a perceptible diminution in the spots on the face and arms. The applications on the calves resulted in the expulsion of a more copious quantity of thicker pus. Pus being heavier than the blood, gravitates to the lower extremities, and when expelled from this locality is usually of darker shade, and more solid consistence. The spots kept on weakening as the applications were made, and every trace of the disease was reported to have disappeared before the date of the Court presentation.

Treatment.

Discharge.

Exciting cause.

The patient returned several months later for the completion of the cure, when eleven further applica-

tions were made, all yielding a free discharge of pus. No further return of the affection was reported.

Note. The fact of the principal point of the discharge of the exciting cause, being usually the inner and lower extremities of the thighs, is apparently due to the fact, that the cutis in this particular part is thinner and of more delicate texture than elsewhere. Owing to this circumstance, and the accumulation of the virus in this spot, which is due to its high specific gravity, it appears reasonable that the expulsion here should be greatest.

#### CASE 9.

History. A lady, aged 52, stated that she had suffered from a skin disease ever since she was about 18 years old. It did not so much trouble her in her youth, as regards affecting her health, but the irritation was always annoying. She said her father had been troubled with the same complaint, and she never expected to get rid of it. For the last ten or twelve years, her health had been seriously affected. There was great delicacy of the throat and chest. Colds and cough were constant. She could not venture out of doors, even in summer, without a wrap around her throat. Although of very muscular build, she could bear very little exertion. Any effort made in this direction was sure to end in her being laid up.

Red patches. The characteristic red oval patches appeared on the arms and legs. The largest were on the legs; they never quite disappeared, but at times became paler. She felt ill just before they got worse.

Treatment. The patches completely disappeared after treatment by the Pyonex. The discharge was copious.

The throat and chest symptoms also disappeared and a great improvement took place in her general health. In the course of two years' time the patches again began to appear and she did not feel so well. One application at this time expelled a quantity of pus, and restored her health.

### LUPUS ERYTHEMATOSUS.

#### CASE 10.

A postman, aged 32, states that twelve months ago a pimple appeared on the right side of the nose. The skin around it became inflamed and assumed a purple colour, which has remained ever since. The inflammation gradually extended to each eyelid, and over face and malar bones. There are lines of dried purulent matter, between the folds of the lids. There is one spot behind the right ear. There are pustules and red spots on the shoulders, back and chest. The red streak of inflammation on the nose and the uniform shape of the two inflamed surfaces on its sides, bear a striking resemblance to the body and wings of a butterfly. History.

On June 30 and July 13 applications were made to the back and chest. A large quantity of pus and serum was discharged. The dried up matter between the folds of the lids has disappeared, and the vermillion colour is two shades lighter. Treatment.  
First.  
Second.

August 17. — A third application was made to the back and chest. The red colour is still further reduced. Specks of dried matter have reappeared on the left lid. Third.

September 24. — An application was made to the Fourth.

whole of the neck. In the interval of five weeks, since the third application, the disease has almost disappeared. There is no more colour or inflammation. On the right cheek, there are only two pin-head spots, and on the left, a pale spot of the size of a small bean.

## CASE II.

Lupus  
exedens.

A lady, aged 32, stated that, nine years ago, a mark, like a freckle, came on the right side of the face, which gradually formed into a scab and spread over the whole side of the face, up to a quarter of an inch from the eye.

Symptoms.

It is now of a bright scarlet colour, like a peony. The epidermis, corium and subjacent connective tissues are destroyed and the facial muscles are laid bare. The extensive raw and crimson surface bears a terrible aspect, utterly disfiguring the countenance, which is otherwise decidedly engaging and good looking. It continues to increase in extent, and a thick crust extends all around the circumference. As this falls off, a number of pustules form under the margin, and when they mature the disease encroaches further in the sound tissues. Every conceivable treatment has been tried without the least result. Her face was so disfigured that she never left her house, except when it was dark. She was unable to visit her friends or leave home. Her general health was good.

It was quite evident that this corroding disease was due to a toxin in the tissues; and as the general health was unaffected, there was good ground for concluding that the infiltration was only local.

Treatment. Pyonex treatment was commenced by an application



to the upper part of the back and chest, including as much as possible of the throat and back of the neck. The resulting discharge was a thick white pus, the pustules being very small and numerous.

Seven days later, the Pyonex was applied all around the neck, and produced another crop of small pustules which were very white. On the twentieth day, the diseased surface had diminished about one third; the healing commencing from the centre and extending towards the circumference. A narrow line of  $2\frac{1}{2}$  inches in length, under the eye, was all that remained at that point. Second application.

On the twenty-seventh day, the Pyonex was applied to the neck and around the right ear, and resulted in a copious discharge of white pus. The scab was now larger and harboured pus at the edges. Third application.

Three more similar applications were made at intervals of seven days. On the thirty-fourth day, the condition was much improved, only a small scale remaining under the eye. A week later this scale was of lighter colour and drying up. On the forty-eighth day, the scale was nearly transparent and colourless, and barely perceptible. She reports having been away on a visit to her friends. Her face is restored to its natural condition and troubles her no more. Total number of applications six. Duration of treatment three months. Three applications.

The case was remarkable for its pure, delicate white discharge, being the only one of its description ever seen in thousands of applications. This white discharge was without doubt the exciting cause of the affection. Discharge.

**MELANITIS.**

## CASE 12.

Symptoms. This is a rare affection, characterised by a dark discolouration of the skin, and accompanied by sub-acute inflammation, pain, severe constitutional disturbance and cephalalgia. It may commence at any place and gradually spread until it invades a considerable extent of the integument and ends fatally. The part affected assumes a dark appearance, somewhat between sepia and black, and is painful when touched.

Case. In the case of a patient who applied for treatment,  
Symptoms. the disease commenced in the right shoulder, and travelled over the clavicle to the neck and inferior maxilla ; it then covered nearly the whole of the right side of the face and nose. The patient was unable to occupy herself about anything, and so frightened from the pain and extension of the affection that she feared it would be fatal.

Treatment. An application of the Pyonex was made to the back and chest, which was followed on the third day by a copious discharge of pus, of a dark yellow colour. The skin was no longer so black, about a half of the dark colour having disappeared. The pain was less and the patient felt much better.

Second. A second application produced another discharge of pus, and the skin had now a scarcely perceptible tinge. All the symptoms had disappeared.

**PSORIASIS.**

Of the skin diseases which most interest us, psoriasis is the most common next to eczema, constituting about 8 per cent. of all skin diseases.

The prominent symptom of psoriasis consists of a copper-coloured eruption, which is covered with small adherent silvery scales, and arranged on the skin in perfect order and symmetry.

**CASE 13.**

It generally attacks the elbows, knees and head ; Symptoms. but at times also the face, eyebrows and ears. It is attended by itching at its commencement, and owing to the consequent scratching, there results an exudation of serum. When it attacks the ears, it may cause temporary deafness. Various names have been given to this affection, such as psoriasis punctata, gultata, numularis, inveterata, &c., which are regarded as various stages in its progress. It appears in many cases to be hereditary.

As is the case with many other affections of similar type, it is more rife in winter than in summer ; Why more rife in winter. the main reason for this fact being, that the sudorific action of the skin and the activity of the viscera, are more pronounced in the summer, and thereby a greater proportion of the various impurities and toxic elements are eliminated from the system, and cease to act as the exciting causes of the disease.

Psoriasis, like many other skin affections, is very Treatment. intractable to general treatment. The scales may be removed and the system may be temporarily toned up by the best of tonics. A long course of arsenic

may partially sterilise the soil which favours the growth of the causative toxins. Chrysophanic acid is credited with more success than any other remedy.

Why so  
unyielding.

But the reason why the affection is so unyielding to the best medical treatment, as also the reason of its constant tendency to return, is immediately connected with the lodgment in the tissues of the purulent toxins which favour the growth of the scales, and propagate the morbid constitutional symptoms.

Cause of  
improving  
symptoms.

When applying the Pyonex Treatment with a view to induce resolution in this affection, we discover that the disappearance or modification of the severe symptoms depends on the quantity of pus that may be expelled after each application of the instrument. If the discharge is copious, the improving symptoms are marked, and come on rapidly. When we note the successive crops of pustules, that are thrown out for perhaps a period of ten or fifteen days—although an application usually does not operate more than three or four days—we also

The scales.

notice the condition of the scales and the waning shade of the copper colour. We do not find it necessary to apply any kind of poultice to the scales in order to detach them, but we discover that they soon become flaccid and lifeless, just as a plant that is dying from want of water, and that they afterwards become detached and leave the

Effects of  
withdrawal  
of pus.

skin free and in a state for healing. Evidently the bright yellow pus which freely escapes through the artificial pores, converts the systemic tissues into a fruitful soil for the growth of the silver scales. As long as this remains within the body, their life is maintained and they can thrive and be reproduced

in any part where they previously existed. But from the moment of the withdrawal of this toxic element, there is no longer any sustaining power in the system capable of imparting life to them. They cannot live in a frame that is nourished by pure blood and untainted tissues.

The irritation that has been so distressing diminishes rapidly, so as scarcely to be noticed. The exudation of serum which was due to the scratching, ceases, and the skin returns to a normal state. Whatever constitutional symptoms may have attended the particular case, under treatment they disappear as the store of yellow pus in the system is being reduced. When the applications are faithfully kept up, until the resulting discharge of pus either ceases altogether or is of very small quantity, the system may be considered as entirely free from the exciting cause and no longer liable to the return of the disease.

The  
irritation.

Constitu-  
tional  
symptoms.

The following cases illustrate the action of the treatment.

#### CASE 14.

The patient in this case was a housemaid, aged 35. She stated that the disease commenced nine years ago, when she was attacked by severe irritation and burning of the skin in various parts, which was soon followed by the exudation of serum, and the formation of minute silvery scales. When she was exposed to the wind or cold the skin would crack and discharge serum, which would be accompanied by intense itching.

History.

The affection first attacked the right hand, and then rapidly extended up the arm to the elbow. The left hand and arm were next invaded. It then



attacked the chin, face, eyelids, forehead and ears. The eyebrows were almost destroyed. The popliteal spaces and dorsum of the feet were next invaded. The general health was so affected that for several years past she has been unable to remain in any situation.

Treatment.

An application of the Pyonex was made to the chest and back, which resulted in a very copious discharge of pus, which was of a thick consistency and a deep yellow colour. Without any further applications being made, fresh crops of pustules continued to be expelled for a period of nearly three weeks. The system was thereby so cleared of the exciting cause, that the scales completely disappeared in several places and were wearing away in others. There was a marked improvement in the general health. No further application was made.

History.

A female, aged 20, of medium height and rosy complexion. Two years ago, a rash commenced to appear on the right arm, on the back of the triceps, and gradually extended to the shoulder and over the spine. It next appeared on the thighs, knees and legs; being especially thick over the patellæ. It afterwards attacked the scalp, and kept spreading until the whole of it was invaded. During the last fortnight, it has appeared on the face. Some months ago, under medical treatment, it disappeared from every part except the knees and elbows. But now it has returned with more virulence than at any previous time, and is unaffected by the remedies which are prescribed. The pulse was 108, but no complaint was made concerning the general health.

The eruption.

The appearance of the eruption is very similar

to rupia, the cone-shaped elevations gradually increasing in height, from their base up, by irregular circular layers. Where only a single layer is thrown out, the surrounding cuticle is of a deep red colour and inflamed. The eruption on the scalp is of a somewhat squamous character, and after becoming dry disintegrates into a greyish-white powder.

Treatment was commenced by an application of the Pyonex to the back and chest. The resulting discharge, though not very copious, was remarkable in being unusually thick and containing a good deal of solid matter. Treatment.

The eruption on the face became paler. Three weeks later the colour was normal and the integument of the face was quite cleansed. The scalp eruption and formation of dry powder ceased. The eruption on the arms became dull and dead; while on the body and lower extremities it was weaker, though diminished less than on the arms. The high pulse gradually became normal.

After an unavoidable interval of six weeks, a second application was made to the chest and back. Seven days later the back and chest were quite free from any signs of the disease. There were still some small spots on the arms. The scales are falling from the scalp and leaving it clean. Second application.

The eighth week, a third application was made to the back and chest. The head, face, chest and back were now all clean. There are still some marks on the arms. Third application.

Four months later she reported that the skin and scalp were clean in every part. Two further applications were, however, subsequently made to insure the Fourth and fifth application.

effective cleansing of the system from the exciting cause. The progress of this case was much slower than usual, the reason being that, in consequence of the patient residing at a distance, it was not possible to visit her frequently. The second and third applications produced a discharge of less volume, density and colour than the first, while the last produced scarcely any.

### URTICARIA.

#### CASE 15.

History. A patient, aged 34, stated that for seven months, he has suffered from urticaria, which appears by apparent caprice in almost every part of the body. Red swellings, varying in size from a pea to a pigeon's egg, and inflamed patches of a smaller or larger size, suddenly appear on the scalp, eyebrows, arms and other parts. They are accompanied by irritation and malaise. They may last a few hours or longer, and at times almost disappear, before breaking out in a fresh place. Fish, especially and other articles of diet, also any stimulant with the exception of whisky, bring on a fresh attack within a few hours.

Diet.

Change of air and the usual remedies have been tried and appear to have no effect. A strict milk diet causes it to weaken, but it always returns on the resumption of ordinary meals.

Treatment.

An application of the Pyonex was made to the chest, with the effect that the disease disappeared within twenty-four hours, all the skin becoming white, and the swellings and hard bases under the

skin becoming absorbed. The discharge which resulted, was of a deep yellow colour, but by no means copious. A small quantity of purulent matter of an irritating character, appeared to be responsible for the skin affection.

Six days later a second application was made to the chest, in order to clear out any remnants of the exciting cause.

## CHAPTER XIII.

### *DISEASES OF THE GENERATIVE SYSTEM.*

#### **AMENORRHŒA.**

##### CASE I.

History. A young lady, aged 17, contracted a cold which resulted in suppression of the menstrual fluid for over twelve months. During this period, she was constantly under medical treatment, and had visited mineral baths. She was in a wretched condition, and stated that she felt she was bordering on fits. Weakness, lassitude, cephalalgia, loss of appetite, occasional flushes, and various other characteristic symptoms were complained of.

Treatment. The Pyonex was applied over the chest, abdomen and back at ten o'clock at night. Between one and two o'clock in the morning, or as nearly as possible in three and a half hours after the application was made, menstruation returned, she rapidly got well and continued so; was afterwards married and had a family.

Effects of extensive application. It may be noticed that, notwithstanding the fact that the object of the treatment in this case was to excite the uterus to return to its normal function, the application was made not only over the abdomen, but also on the chest and back. Experience shows that the general effect of a treatment applied over



a large surface, is much greater as regards its effects of revulsion and counter-irritation, than when applied only locally. In many cases, the local congestion, or pain, are relieved in a surprisingly short time, when the treatment is applied over a large surface; when a proportionately small effect would be made by treating only the part which appears to be the seat of the trouble.

## CASE 2.

A patient, aged 23, engaged in making card boxes, cannot remember ever feeling well; always weak and unequal to work. When 10 years old she was in the hospital with congestion of the brain, and ever since has been somewhat deaf. Chest always weak and affected by the least cold; constant attacks of dry cough. Menstruation most irregular. It commenced when she was 15, and after this did not reappear for twelve months. After recurring for two or three months, it again disappeared for six months, when, after two recurrences, it was again absent for six months. At other times it has appeared once in two months, after which it has ceased for periods of three, four and five months. She has constant pains in the back, side, shoulders and head; the legs are weak and giving way. She feels ill a week before the menses appear. Is much exhausted after her day's work.

The chest was first treated, and a copious discharge of pus followed. Four applications to the back and chest were made during the next four months. Her health had now improved in all respects. During the last ten weeks there had been

History.

Cough.

Treatment,  
first.

Fifth.

no cough, no pain in the back, or elsewhere, no weakness. She has menstruated regularly and without pain. The hearing has also improved. She is able to work all day without feeling tired and exhausted as formerly.

Treatment.

Chest  
symptoms.

General  
exit.

Facility of  
discharge.

Effect of a  
single exit.

The treatment in this case was not specially directed, to begin with, to the amenorrhœa. The chest symptoms were such as to call for immediate attention, and there was a steady improvement in them from the commencement of the treatment. The repeated applications on the chest and back provided a sufficient exit for the whole system to discharge the purulent matter, diffused through its tissues. By following this plan of treatment, satisfactory results may always be anticipated. If the part where the more urgent symptoms appear be first taken in hand, a copious discharge usually results, and when once the puriform expulsion has been established at such a point, it would seem as if there were a greater facility for the discharge to be continued here than elsewhere. When this peculiarity is marked in any region, it appears to be preferable to give an application to the part as frequently as circumstances will admit. Although in this case no application was made over the hypogastric region, it was clear that the purulent element, in the muscular tissue of the uterus, was sufficiently expelled to enable the viscus to resume its normal function. It frequently happens in practice that an effective outlet, being provided at one particular point, serves to relieve the whole system.

CASE 3.

A patient, aged 22, above medium height, well formed and of florid complexion, says she has menstruated only twice in five months. She has constant headaches, and suffers from weakness and loss of appetite. Frequent crimson flushes in the countenance. She feels unable to go on with her work as housemaid, and fears she will be compelled to give up her situation. She has been all the time under medical treatment.

History.

Symptoms.

An application of the Pyonex was made to the abdomen and resulted in an irritating discharge of reddish pustules. The patient was conscious of an unusual sensation over the whole surface treated, and stated that it was accompanied by some degree of soreness. After an interval of only forty-four hours, the catamenia returned. The blood was of dark colour, and the flow more abundant than usual. All her symptoms were relieved, and the periods took place regularly afterwards. She did not apply for further treatment, although it would have been advisable, to ensure a permanent cure.

Treatment, first.

Function restored.

DYSMENORRHŒA.

This is a complaint which often renders the life of many young women a burden. The pain suffered at the accession of each periodical discharge is intense, and prolonged at times to five and six days. The strength of the patient is so reduced by the protracted suffering, that it is barely re-established before the next return of the menstrual period.

Painful menstruation.

Intense pain.

Medical  
treatment.

There are various methods of medicinal treatment which, when persevered with, give much relief in these cases. But the root from which the evil springs is not expelled from the system thereby. Moreover, the time occupied may spread over months.

Treatment.

Blood  
poison  
expelled.

When the Pyonex is applied over the chest and abdomen a quantity of pus is expelled from the system. The presence of this impurity constitutes the impediment to the uterus, in the performance of its functions. On its expulsion from the system the uterus resumes its function without pain. On the next return of the menstrual period but little inconvenience is realised. A week before it is expected a second application should be made.

## CHAPTER XIV.

### *DISEASES OF THE MUSCULAR SYSTEM.*

MUSCULAR RHEUMATISM, OR MYALGIA.

PROGRESSIVE MUSCULAR ATROPHY.

TETANUS.

WRITER'S CRAMP.

CRAMP OF THE LEGS.

#### **MUSCULAR ATROPHY.**

THIS is a comparatively rare disease; it usually <sup>Rare.</sup> begins in the muscles of the hand; those of the ball of the thumb or little finger become atrophied and dry up, it spreads to the trunk and lower extremities, <sup>Progresses slowly and is fatal.</sup> and often proves fatal. The duration of the fatal cases averages about five years.

The cause of the affection is ascribed to degeneration of the anterior horns of the spinal cord, leading to atrophy. This is accompanied by congestion and inflammation of the immediate parts. <sup>Cause.</sup>

The application of the Pyonex in these cases <sup>The Pyonex.</sup> reveals the morbid state of the system, and accounts for the degeneration of the nerve substance.

The system is simply charged with purulent <sup>State of the system.</sup> matter; it pours out at every part which is brought into contact with the instrument. Not only on either side of the spine, but also on the arms, legs and body, the pustules are exceedingly numerous and of large size. The chest, abdomen, back and extremities <sup>Parts to be treated.</sup> should be treated.



**MUSCULAR RHEUMATISM.**

**Myalgia.** The muscles in the various parts of the system, are at times affected by a neuralgic pain which is known by the name of muscular rheumatism, or myalgia.

**Acute or chronic.** This affection is not of infrequent occurrence, and may be either chronic or acute. It usually

**Symptoms.** commences with a dull aching pain, which increases until it becomes severe or intense. It may continue at intervals during the night, and deprive the patient of sleep, being accompanied by sharp spasmodic exacerbations, which result in moans or shrieks. The motion of the affected part is at times so agonising that a fixed position is preserved as long as possible. The parts may be tender on unequal pressure; while a firm pressure over the whole may be borne and convey a sense of comfort. The pain may change from one part to another, but is usually severer where it commences.

**Parts attacked.** The muscles of almost any region may be attacked, including those of the head, neck, upper and lower extremities, loins, thorax, shoulders and abdomen, &c.

**Diagnosis.** Its characteristic symptom is, the increase of pain on the motion of the part; in this respect it varies from neuralgia.

**Duration.** The affection may persist for days or weeks in its acute form, or for months when chronic.

On the application of the Pyonex to the affected part, the pain is generally relieved in a few hours. A moderate discharge of light yellow pus results on the third day. The applications should be repeated until there is no more pus expelled.

**TETANUS—LOCKJAW.**

A patient, aged 33, of good physique, applied to me to know if I could do anything for him as he was suffering from lock-jaw. I had never heard of the Pyonex Treatment being tried in such a case, but told him that as far as I could judge, there would be a fair chance of his deriving benefit from it. The case appeared to be idiopathic, as he could not ascribe it to any cause. During the last nine months the jaw had been gradually closing. At night the teeth at times became so tightly clenched that he woke up terrified. Six weeks ago it was impossible to insert a coin between the teeth. After a consultation with three medical men, he was placed under gas and a tooth was extracted, and an attempt was then made to force open the jaw, but it could not be moved in the least. I found that the jaws could be separated about a quarter of an inch, but when this point was reached, the rigidity appeared to be such as if the whole articulation were made of steel. The general health was so affected that he was unable to follow his occupation or partake of nourishing food as formerly.

History.

Symptoms.

On January 20, 1898, the Pyonex was applied to the back and neck. This produced a discharge of yellow pus over the whole surface treated. On the third day after treatment, as soon as the pustules were mature, the patient could open the jaw far enough to place his finger between the teeth. He also felt an improvement in the general tone and condition of the system. On 26th and 29th, an application was made to the back and neck, and one to the calves.

First treatment.

Second.

Third.

Fourth. On February 2, a fourth application was made, to the back and neck. The patient was now able to separate his teeth a full inch and partook of his accustomed food with comfort. He felt well and had agreed to resume his regular occupation of engine driver on February 7.

The quick relief that followed the applications over the spinal cord, was due to the expulsion from the system of the very virulent toxin of the *Tetanus bacillus*.

### WRITERS' CRAMP.

Cramp. When any set of muscles and tendons are over-taxed, as happens to the fingers of clerks who are constantly engaged in writing; their strength is at last entirely exhausted, and they are unable to continue their work. The flexor tendons remain contracted by the involuntary action of their corresponding muscles. The same thing happens at times to tailors, seamstresses, violinists, pianists and typewriters.

Cause. Large cork penholders. If writers use a penholder of cork of about three times the usual diameter, they are not so likely to be soon troubled by cramp.

Treatment. The usual methods of treatment for this affection can scarcely be said to result in much benefit. If, however, the Pyonex be applied to the whole of the arm or forearm, the cause of the complaint is soon removed.

Pus expelled. Not only is there a discharge of a large quantity of purulent matter, but the arm may become swollen and require to be carried in a sling for some days.

Cause of swelling. This swelling is caused by the large quantity of poisonous element which has been drawn away from

the hand and has lodged in the muscles of the arm. The presence of so much impurity is a sufficient explanation of there being such inability on the part of the muscles and tendons to perform their due functions.

Power of motion usually begins to be restored to the fingers as soon as the swelling disappears. Further applications may be necessary. The safest rule for our guidance is to repeat the applications as long as pus is expelled.

Safest rule.

If, after the expiration of two or three weeks, the fingers are not as supple as desired, each finger, together with the back of the hand and wrist, may also be treated, and they should be kept quite warm for three days after the application. If the hand and fingers be treated at the same time as the arm, time is saved, but it is not usually necessary to treat the fingers. The arm and hand will continue to gain strength for some weeks after the application, but the fingers should not be used until they are well.

Treat hands and fingers.

Gaining strength.

### CRAMPS IN THE LEGS.

Cramps.

Many persons are troubled by attacks of cramp in the calves of the legs, which prove most troublesome at night. The severe pain causes them to hurry out of bed and spend some time endeavouring to reduce the spasmodic contraction of the muscles. This kind of cramp is often caused by an acid state of the system, and a good dose of Bicarbonate of Soda taken every night at bed time will probably relieve the acidity and reduce the spasms.

Severe pain.

Sodæ Bicarb.

If, however, this simple treatment is not sufficiently effective, the Pyonex may be applied to

The Pyonex.

Impurities expelled. the whole of the leg. The immediate result is to expel a considerable quantity of pus, together with any other impurities that may be present in the muscular tissues.

Cramps disappear. The cramps disappear from the time of the application; the muscles after a few days may or may not become perfectly flaccid, but they lose none of their contractile power. An application of the Pyonex is usually sufficient to effect a cure.

History. A patient, aged about 50, applied for treatment, who was much troubled with cramps in the calves. He was attacked every night, the pain being very severe. It made him jump out of bed; a considerable time elapsing before he obtained relief. This had been going on for so long a time that it rendered the nights well-nigh insupportable.

Treatment. There appeared to be no indication that the cramps were caused by acidity, so an application of the Pyonex was made to each leg, the whole of the surface being treated with the exception of the anterior surface of the tibia—a discharge of purulent matter resulted from each extremity. The cramps disappeared from the date of the treatment, and he reported ten days afterwards that he had had no return of the affection.

Pathology. The effect of the treatment on muscles which are subject to such spasmodic contractions, is often to render them perfectly flaccid for a few days. Every vestige of hardness or firmness vanishes and the muscles, such as those of the calf, can be shaken from side to side when the limb is flexed. The power of contraction, however, is unchanged, and the patient is unconscious of the



change, the sensation remaining the same. The reverse, however, happens when the application is made to muscles which are flaccid from lack of tone in the system. In these cases they soon begin to become firm, and as the treatment is continued assume the solid hardness of health.

## CHAPTER XV.

### NEURO-PATHOLOGY.

1. LOCOMOTOR ATAXIA, SYMPTOMS, &c..
2. EFFECTS OF PYONEX TREATMENT.
3. TREATMENT.
4. FIVE CASES.

#### LOCOMOTOR ATAXIA.

Etiology.

The cause of this disease, which commonly attacks the middle aged, is attributed to the degeneration of the posterior columns of the spinal cord. They become shrunken, and assume a grey appearance, and a harder consistence than is natural. The point of junction of the dorsal and lumbar regions of the spine, is the usual seat of the affection.

Primary cause.

If we look for the cause of this degeneration, we find it to be due to a lack of vitality of the part. There appear to be good reasons for assuming that this lack of *vires vitæ* is due to the presence of morbid impurities, by which the cord and its surrounding tissues are infiltrated.

Pains and diagnosis.

Shooting and lancinating pains in the lower, and later on in the upper, extremities, are usually a prominent symptom, and form one of the points of diagnosis between this and the kindred disease which is known as hereditary ataxia.

Its course.

The affection pursues its course sometimes rapidly, but more generally slowly, there being every grade

of suffering and severity in the symptoms, between the severe and mild cases.

When the symptoms are violent, wasting of the muscles, paralysis, inability to digest food, and a cachectic condition of the system, usually precede death, which may be due to the exhaustion of the vital forces.

The shooting and lancinating pains are of a distressing character. They may commence in the feet, arms or abdomen, and either radiate to the surrounding parts or shoot up through the body to the crown of the head. They come on at uncertain times and last for various periods, of from two or three, to fifteen minutes or more. The agony of the patient causes him to cry out loudly, so that his voice may be heard at a distance, and when the pains abate, he is left in a state of utter prostration. The severity and frequency of the pains, depend on the stage and character of the case. In most instances they are not a prominent symptom.

As the disease advances, the temperature of the upper and lower extremities gradually lowers, so that the patient complains that he is never warm. He may occupy a warm apartment, and his body may be covered by manifold layers of extra clothing, but all to no purpose. The vitiated state of the nervous system, and the interruption in the proper communication between the brain and the distal parts, are advanced to such a stage that the function of the nerves is interfered with to a serious degree, and the extremities assume a condition of semi-nutrition and cold torpidity.

As the disease advances, sensation gradually be-

Pains.

Temperature.

Sensation.

comes dull, and at last disappears altogether in the parts most affected. The point of a needle, being applied to the back, is not felt keenly ; or if two points are applied at a distance of 2 or 3 inches from each other, the patient is unable to distinguish whether he is being touched by two points or one. Later on, the integument may be pierced or a hot iron may be applied to it without causing pain. The leg may hang out of bed all night without the patient's knowledge. Having no sensation in the fingers, he is unable to do anything with the hands without the assistance of the sight, he is not conscious that he is grasping anything, unless he sees the object in his hand. He cannot withdraw a coin from his pocket, and if his body is uncovered at night he cannot rearrange the bedclothes without a light.

Power.

The lack of power in some of the limbs at times amounts to partial paralysis. This bears an exact ratio, according as the communication between the brain and the affected parts is more or less interrupted. The hand, arm, or leg may be almost powerless ; or the patient cannot sit up in bed, without swaying to and fro. This is also partly owing to the extreme relaxation of the ligaments and muscles.

Constipation.

The muscular coat of the intestines loses its tone and there is consequent constipation, while the bladder

Bladder.

empties itself every night during sleep, owing to partial paralysis of the neck. At times the power

Fatigue.

of the hand to grasp tightly, and of the legs for walking good distances, is wonderfully preserved. On the other hand, there is often great fatigue after any kind of exertion. There is frequently loss of the

sexual powers, which, however, at an earlier stage, Impotence. may be morbidly increased.

The gait becomes irregular and spasmodic, un- The gait. initiated persons thinking that the patient is intoxicated. The legs are jerked forward in a grotesque Jerk. manner, while the arms are thrown out in order to preserve the balance. Later on, walking, standing, or even sitting, become impossible, and the recumbent posture has to be maintained.

The sight becomes weak, the patient can read but The sight. for a short time, and cannot gaze steadily on a given object. While walking, the eyes are fixed on the feet. There may be strabismus, diplopia or night-blindness. One pupil may be dilated and the other contracted, or the pupil may not contract on exposure to light. These symptoms are due to the impaired function of the nerves supplying the muscles and the various other parts, and may be either persistent or of a transitory character.

The lingual nerves and muscles may also become Speech. involved, in which case the patient is unable to articulate his words clearly.

The loss of the power of co-ordination is mani- Co- ordination. fested to a remarkable extent in this disease. The patient is unable to guide the movements of his limbs or body. This lack of power is developed to a still greater extent when the eyes are closed. While walking on the pavement the patient will bump against a person that he meets, notwithstanding his extreme efforts to avoid him. He cannot apply the tips of the fingers of one hand to those of the other, with closed eyes, nor can he guide his hand to the



mouth or nose, but in attempting to do so he will thrust it over his shoulder.

Diagnostic  
symptoms.  
Percussion  
below the  
patella.

In the earliest stages he cannot stand while the eyes are closed. Percussion below the patella, or on the tendo Achillis, does not produce the proper reflex actions. These are important diagnostic symptoms at the commencement of the disease.

Vomiting.

Owing to defective nervous power, the stomach is unable to tolerate any but the simplest diet. Meat or fish at times cannot be taken, while vomiting comes on every morning. The strength is thereby greatly reduced and the body becomes extremely emaciated.

In severe cases almost all the foregoing symptoms may be present, in others only a few.

#### EFFECTS OF THE PYONEX TREATMENT.

Pains.

The more acute symptoms are usually the first to be relieved after commencing the treatment. The severe lightning pains when present rapidly subside after the first copious discharge of pus. Also the

Power.

pains in other parts disappear. There is also a considerable return of power during the first few days.

Eyes.

Tempera-  
ture.

The increase of strength is most marked at the commencement, after which it is more gradual. There is also a greater command over the movements of the eyes and a marked improvement in the co-ordination of their muscles. When the feet and lower extremities have been extremely cold, it is quite interesting to see how soon the natural warmth is restored after the expulsion of the pus, which resulted from the earliest applications. The extra clothing has to be dispensed with, and the room has to be kept at an ordinary temperature.

Strength quickly returns to the stomach and the appetite for animal food accompanies it. The emaciation also begins to disappear. The sexual powers usually begin to return after two or three applications, they may, however, take much longer.

Stomach.

Sexual powers.

The upper extremities soon regain their strength, while the time required for the lower is uncertain. As the spinal cord is often more affected in the dorso-lumbar region than elsewhere, the command over the legs and feet cannot be re-established until the condition of the affected part has considerably improved. In order to effect this, many applications are usually necessary in the neighbourhood of the lesion. The extent and character of the lesion determine the length of time necessary for, as well as the chances of, complete restoration. The reinstatement of the spinal medulla, in this affection, is necessarily a process requiring time. It cannot be hurried, and the utmost we can do is to continue the applications as long as they yield crops of pus. While there is an active purulent discharge, we are satisfied that we are on the right track, and we have reason to conclude that an improvement in the condition of the affected part is in progress. The morning sickness does not persist long. The power to retain and digest food returns, and this troublesome symptom begins to wane.

The extremities.

Lesion of the spinal cord.

Vomiting.

The bladder, which so commonly empties during sleep, quickly regains tone in its neck and retains the water. The patient is also able to void and cease voiding at will.

Bladder.

In the rarer cases of the escape of the motions from the rectum, notwithstanding every effort to prevent it, the natural powers are restored to the

Motions.

sphincter ani, so as to make this accident of exceedingly rare occurrence.

**Sensation.** In severe or advanced cases, the sensation in the upper and lower extremities may completely disappear, while on the back it is very imperfect. In the early stages of treatment it returns first in the back, then in the legs and feet, and lastly in the arms and hands. The function of the sensory nerves is so restored, that the presence of a hair between the finger and thumb is readily detected.

**Constipation.** The troublesome constipation soon disappears.  
**Tolerance.** The tolerance of exercise is increased, the fatigue after exertion of any kind being less noticeable.

**Gait** The gait improves, the jerk being less pronounced, but this is one of the last symptoms to disappear. The expulsion of the pus which is in the tissues of the calves and thighs, helps to improve the command over their movements, but complete recovery depends on the restoration of the spinal cord to a state of health.

**Co-ordination.** The power of co-ordination returns to every part. The hands can be placed in any position with closed eyes. The eyes no longer roll from side to side, but look in a straight line, and the power to read is restored. The patient is able to articulate his words clearly and the speech becomes natural. Self com-

**Patella.** mand and will power are reasserted. The patellar reflex percussive motions return slowly.

The rate of the general improvement appears to depend on the rapid or slow expulsion of pus. After a copious expulsion several symptoms may rapidly disappear, while with small expulsion the progress is slow.

TREATMENT.

The treatment of Locomotor Ataxia by the Pyonex requires probably more care than that of any other affection. Not only is the seat of the lesion in the spinal cord in an exceedingly sensitive state, but the whole of the nervous system from the cerebral medulla downwards is so affected that the usual tolerance of the treatment is diminished.

Treatment.  
Great care  
needed.

It is never safe to commence the treatment by giving an ordinary application on the back. If the back be first treated the perforations should be only a few, not more than six, and the taps of the instrument should be light. The oil should be sparingly applied. But experience shows that the safer plan is to begin with one calf, and if the result be as usual, to follow with the other. The chest can then be treated; then the upper third of the spine, followed by the middle third. The dorso-lumbar region must be approached with the greatest care. The perforations should not be made near the seat of lesion until the patient is far on the way to recovery. A margin of three or four inches on each side of the lesion, should be left untouched, the reason being that the affected part is too weak to make the effort which is involved in the expulsion of the pus, and takes a long time to recover its strength.

Perfora-  
tions.

The oil.

Avoid seat  
of lesion.

Every part of the frame has to be treated in turn. In order to restore the clear articulation of speech, and the proper command of the natural movement of the eyes, the perforations are made over the shoulders, the throat and back of the neck, and are carried up to the roots of the hair. The applications are repeated here and in all other parts

Treatment.

Speech  
and sight.

Repetitions.

Pain. as long as there is a resulting discharge of pus. If at any period of the treatment pain be complained of in a particular locality, an application is made there at once, in order to relieve it. This rarely fails to give prompt relief, and such relief is usually permanent.

Pus. The legs, thighs and arms all have to be treated ; pus being freely discharged from every part. Pus being heavier than blood, gradually gravitates to the lower extremities, in the case of those affections where the purulent infiltration is general. Owing to this fact, the discharge which results from applications to the thighs, and especially the calves, is more abundant than that from other parts. It is also noticeable that the pus is of thicker consistence and of darker colour. It is due to such conditions, that

Results. Pyonex applications to these parts are usually followed by a more tonic state of the muscles, and an increased power of the patient to command his movements when walking.

Treatment. When a patient is gaining strength and improving in all his symptoms, he may tolerate as many as eight applications in a month, and he may be anxious to have them. But experience does not favour this course. The nervous system is highly taxed by the too frequent efforts to expel the purulent products.

Frequency of application. A longer rest between the applications is beneficial. The preferable plan appears to be to keep the strength and spirits of the patient at the highest pitch, and while he is in this condition the healing power appears to be most in the ascendancy.

Healing power. If there is any shrinking from the treatment on the part of the patient, a rest of a few days is



advisable. The rest should be of sufficient duration for the patient to feel quite ready for further treatment. During the interval of rest the administration of such nerve-bracing tonics as Strychnia and Phosphorus is attended by excellent results. The system, while being cleansed from its morbid pyoid impurities, appears to be singularly susceptible to the therapeutic qualities of nerve stimulants. Five or even six Pyonex applications per month appear to be borne well, if they are not too extensive. In some cases the discharge from the thighs lasts several days, and a longer rest is then needed. But the most care is needed when treating the neighbourhood of the spine. Small applications are made, and their effects are carefully watched.

Nerve  
tonics.Five or  
six per  
month.

Thighs.

Spine.

We discover during our treatment that not only are the posterior columns of the spinal cord morbidly affected by purulent infiltration, but that every nerve and muscle appears to partake of the evil. Inasmuch as the defective power to command the motions of the eyes, tongue and arms, does not depend on the dorso-lumbar lesion of the spinal cord, we direct our attention to the discovery of other causes. When the tongue and eyes are affected, and we apply a treatment as near as possible to the brain (*i.e.*, all round the neck and shoulders—the scalp can in no case be touched), we are rewarded by a free discharge of pus, and an immediate improvement in the articulation of speech, and the co-ordination of the muscles of the eyes. We therefore conclude that cerebral infiltration was the cause of these abnormal conditions. Also when a free discharge of pus over the scapulæ results in the restoration of

Treatment.

Relief of  
symptoms  
not caused  
by spinal  
lesion.

Eyes.

Tongue.

Arms and fingers.

Thighs and legs.

Plan of treatment.

Healing promoted.

power and sensation to the arms and fingers, we conclude that purulent infiltration was the cause of their morbid condition. The discharge of pus from the thighs and legs is also often followed by prompt improvement in the walking powers and a diminution of the jerk. We therefore conclude that the spinal lesion is not the sole cause of the symptoms manifested by the lower extremities, but that purulent infiltration has also been one of the causes of the morbid conditions. Such considerations as these are a decided help to us in forming our plan of treatment in Locomotor Ataxia.

While we are using our endeavours to empty the general muscular system of its purulent products, we are improving the tone of the whole frame. The muscles pass from flaccidity to hardness, and every function becomes more normal; the exciting cause is losing power, and the healing of the spinal lesion is in all respects promoted.

#### LOCOMOTOR ATAXIA.—CASE I.

The history of the case now before us is given *in extenso*, as it shows various ways in which the system works, by way of expelling impurities, other than those which are usually looked for from the application of the Pyonex.

History.

The patient, aged 35, and by occupation a master mason; five years ago was attacked by influenza, remaining three weeks in bed. He was unable to turn in bed for seven days. He had sharp darting pains, which started at the nucha and ran to the bottom of the spine. After recovering and resuming work, he was again laid up for seven days by an attack of diarrhoea and vomiting.

Two years ago he fell on his back while entering a railway car, owing to a sudden movement of the train. Some time after this he begun to lose control of his legs, and six months later could walk only with difficulty. During the last twelve months he has been unable either to walk or stand. He became an inmate of a hospital in Bath, and after some weeks' residence there, his symptoms were such as led to the conclusion that his case was Locomotor Ataxia, and that nothing could be done for him. His wife was told that with good nursing he would probably live a little longer. He was taken back to his home to die, and for some months past he has not been attended by a medical practitioner.

He cannot leave his bed, nor can he sit up without support. When the eyes are closed and the arm is extended, he is unable to find his nose with the hand, passing the hand over the shoulder in the attempt to do so. The eyes roll about, he is unable to read, or look in a straight line. He has completely lost sensation in the legs and feet. His leg hangs out of bed the whole night without his knowledge. The thighs and legs have been very cold for months, and lately also the arms and hands have been cold. He has occasional periods of delirium.

Sensation is so defective over the back, and in the fingers, legs and feet, that he cannot detect heat, cold, or the prick of a pin. Sharp pains commence in the feet, and dart like lightning through the spine up to the back of the neck in quick succession. These pains are frequent and very violent, and make him shriek so loudly that he is heard for some distance in the street; he attempts to stifle his cries

Symptoms.

Lack of co-ordination.

Sight.

Temperature.

Sensation.

Pains.

Lightning.

by stuffing his mouth with the blanket. He has constant pain at the back of the head, neck, abdomen, popliteal spaces and shins.

Constant pains.

Leggings made of sheepskin, with the wool inside, thick packing of cotton wool, hot water jars and blazing fires, are all employed in vain attempts to keep the limbs warm. His pulse varies from 90 to 100. He is always constipated. The appetite is fairly good, but there is inability to retain food, owing to vomiting.

Wraps.

Vomiting.

The bladder is not affected. He is able to void at will, and the water does not escape at night. The sexual powers are lost. The body is reduced to emaciation.

Bladder.

Treatment was commenced on February 12, 1896, by one row of perforations on each side of the spine. The discharge on the third day was very abundant, especially from the upper part of the spine and over the scapulæ. The pus was very thick, and of a dull yellow colour. The pustules were very large, and the entire surface treated was subcutaneously completely covered with pus. It took about forty minutes to empty the large pustules and remove the pus which underlaid the whole of the integument, which being accomplished, the patient expressed himself as much relieved. He is weak and has no appetite, and has been very restless.

First application.

Discharge.

Sensation restored.

The improvement which took place on the third day after the first application was somewhat extraordinary. Sensation has returned to the hands and fingers; he is able to hold a pin between the finger and thumb of either hand, and feel it distinctly. He can also feel if the feet are touched. His wife

brought his coat, having put a coin in one of the pockets, and he extracted it between two fingers. On questioning him as to the time of return of sensation, he said that yesterday afternoon he distinctly felt that sensation was slowly travelling down the legs, and it reached the feet and toes, so that he could feel the bedclothes.

It took about an hour to reach the feet. About two hours later he felt returning sensation in the arms; it travelled slowly until it reached the middle of the palms, where it made a stop for an hour or two. Then it started again and went on to the tips of the fingers.

The pain in the right shoulder and arm has disappeared; the lightning pains from the feet upwards have entirely ceased, as have all the other pains. Pain relieved.

*Power.*—He is able to sit up in bed without wobbling about. He can move the arms with more firmness, and grasp objects with either hand. Power restored.

*Sight.*—The eyes no longer roll about. He is able to look steadily in a straight line. Sight.

*Animal Heat.*—The thighs, legs and feet, which it was before impossible to keep warm, are now comfortable. The cotton wool, leggings and hot jars, are all dispensed with. He implores his wife to keep the fire low, as he cannot bear the heat; his extremities are quite warm with ordinary coverings. Warmth.

On February 16 and 17 a second and third crop of pustules appeared on the back which required to be pierced and emptied.

He feels that strength is returning slowly. Strength.

February 22.—During the last five days he has continued to improve. He is able to stand, while Returning power.



leaning the back of the legs against the bed. The  
 Hand. left hand, which before was almost paralysed, is now strong. He can grasp with it tightly, and move about on the bed, supporting his body with his  
 Legs. hands. He can move his legs nimbly. Since taking  
 Appetite. a tonic the appetite has been good. He eats animal food, which he previously refused, once or twice daily, and is anxious for the meal to be served. The face is perceptibly fuller. The hollows between the metacarpal bones are filling up. There is no  
 Pain. pain in any part, and the whole body is greatly toned up.

Second application. February 25.—An application was made to the chest. He is rapidly gaining strength and weight. He now sits up most of the day in the arm chair, which he has not been able to do for six months.

Discharge. February 28.—The discharge on the chest, resulting from the last application, is very profuse. In quantity and quality resembling the discharge from the back.

March 3.—Quantities of pus are still being discharged from the chest. He took cold by sitting in a cold room.

Third application. April 2.—An application was made to the central portion of the back. During the last five weeks he has continued to improve steadily. He has gained considerably in weight, and has a healthy colour. He says he feels better than he has for years. The

Strength. arms and hands are restored, as far as he can judge, to their natural power, sensation, and strength. He feels that he could work if the legs were strong.

Muscles. The muscles of the whole body, which were intensely lax and flabby, have resumed the hardness of health.

Three days ago he took cold owing to exposure, and the old darting pains returned with severity, commencing in the soles, and running up the legs and spine, and terminating in the crown. They produced spasms of the lower extremities and opisthotonos. For a short time, the head was jerked back with such violence, and made him feel so ill, that he thought he was dying. The pains were not so severe as those which recurred so often daily, before the commencement of the treatment, and this was their only appearance since that date.

Effects of  
a cold.

April 7.—The discharge produced by the last application consisted of common-sized pustules, containing thick yellow pus. The patient complains that his weakness is greater than at any time during the treatment, and says it was caused mainly by the vomiting, which, for two days, has been distressing. Suddenly a quantity of intensely bitter green fluid was vomited, which came from the liver; after which there was a rapid improvement in the general condition of the system. The first day he vomited morning and afternoon, about half a pint of bile, of a greenish-yellow colour. The second day another half a pint, more green than yellow. It involved a great effort of the system to get rid of it. There was intense nausea accompanied by pain between the scapulæ. It seemed to him as if the liver were being turned about and rolled up, from the extreme efforts to get rid of this impurity. These two days were accompanied by severe prostration, but an hour after the vomiting ceased he was comfortable, and reading the newspaper.

Discharge.

Bile  
vomited.

Action of  
liver.

Bile  
vomited,  
one pint.

April 26.—An application was made to the left

Fourth  
application.

Biceps treated.      biceps and chest. The biceps was treated in order to remove a pain which he felt in the arm. A copious eruption of thick pus resulted in each place. He felt no uneasiness from the treatment, and ate and slept well. He feels more warmth and is stronger. The pain in the arm has disappeared.

Fifth application.      April 30.—An application was made to the right arm, and left thigh.

Sixth application.      May 13.—An application was made on each side of the spine. This was followed by the discharge from the stomach of a third half of a pint of green bile, giving him great relief.

Seventh application.      May 17.—The lumbar region was treated, and on 24th he reported vomiting about a pint of bile, not so green, thick, or of such a bitter taste as formerly. No appetite for two days. The pain during the vomiting was now referred to the left hypogastric region. The bile was frothy. The spine feels stronger. The natural sensation of strength returned to the legs for a few minutes.

Eighth application.      June 7.—An application was made to the lower half of the spine. During the last week the appetite has been good, and he has rapidly gained strength.

Sits up all day. Constipation relieved.      He sits up in an arm chair from 9 a.m. to 10 p.m. The intestines for some time past have been acting without the aid of medicine. On 9th he expectorated a pint of acid saliva, after which, about two pints of yellow and green bile were vomited, of a more offensive character than before. It was so pestiferous, that it had to be thrown away at once; the attendant not recovering from the effect of the smell for the whole day. After this the salivary glands again begun to secrete, and half a pint of clear acid fluid was thrown out.

Saliva, half pint.

June 19.—A small application was made to the left hypogastric region, and a very thick discharge resulted. He feels a sense of relief in the part, as if a weight had been removed. The water voided was like pea soup, after this and subsequent applications on the right and left hypogastric regions.

Ninth application.

Urine.

June 29.—Another application was made to the right hypogastric region, after which another pint of acid saliva was ejected, which came from the parotid glands. The water was so highly charged with solids that for a time the urethra became blocked; a part of what was voided was like foul oil.

Tenth application.

Saliva, one pint.

Urethra.

The sexual powers, which had disappeared for two years, begun to return after the second application, and soon afterwards became natural.

Sexual powers restored.

Between June 29 and July 19 four applications were made to various parts. The patient now reports that the application made to the left leg on 13th has strengthened the leg, knees and ankle, so that he is able to sit with his weight on the thighs, and the feet on the floor, having until now been obliged to keep them raised.

Leg.

August 4.—An application was made to the right leg, resulting in a profuse discharge. He is now able to walk, when steadied under the arms by his wife.

Fifteenth application.

Walks with help.

August 14.—An application was made to the abdomen. The whole body was massaged yesterday, which warmed him throughout, and produced a good night's rest. Reports vomiting another half a pint of clear fluid and a pint of bile. This last pint was not so green or acid, and had no offensive smell. The prostration was not so great. The water was of a thick and yellow colour, but gave him no pain

Sixteenth application. Massage.

Bile, one pint.

in voiding. At the commencement of the treatment  
 Discharge. the discharge of pus, which resulted from several applications, was not thrown out merely at the points of the punctures made by the instrument, but under the whole surface of the integument; the later applications, however, produce pus only at the punctures, the intervening integument remaining clean. At the last application over the abdomen the pustules became  
 Confluence. confluent over the left side, where there had been a dull pain.

Seven-  
teenth  
application. September 20.—An application was made to the lumbar region. During the thirty-six days' interval, he has been prostrate with an attack of influenza. He has been massaged once or twice a week. There has been an increase of weight, and in the hardness  
 Muscles. of the muscles. On September 30, he vomited half a pint of clear tasteless fluid, and has felt better since.  
 Diaphor-  
esis. There was a profuse perspiration over the abdomen for about an hour.

Eighteenth  
application. October 4.—The lumbar region was again treated. He reports having had a hot tingling sensation in the legs, feet and left upper extremity, similar to what he felt at the commencement of the disease. After this last application he vomited  
 Six pints. another half a pint of bile, making a total of six pints. The patient then went into the country for a change of air, and as the author went to reside in another part of England, there was no opportunity of continuing the treatment.

Before the commencement of the treatment, he said he would readily have put an end to his miserable existence, and it was only the fear of "the hereafter" that prevented his doing so. He now stated that his



days and nights were full of comfort and he waited for the return of strength to the legs, so as to follow his occupation.

There are a few points of interest in this case, Points. which serve to show various phases of the therapeutic results which supervene, owing to the withdrawal from the system of purulent matter ; as also the action of some of the viscera under the stimulating effect of the Pyonex Treatment.

There was a marked action of the liver, kidneys and salivary glands, and an action in a less degree of the sudoriferous glands.

The liver on six occasions excreted from the Liver. system an amount of fœtid matter, which was extremely acrid and offensive. It was a mixture of Excretion. bile and oily and other matters, of a decomposed nature, which apparently so clogged the gland as to prevent the performance of its proper functions. The constitutional disturbance to the patient at the approach of the movement for the unloading and ejection of this impurity might be almost likened to the throes of a parturient female. But no sooner was the load got rid of than a marked general improvement was manifest in the tone and strength of the whole system.

Whenever the treatment was applied to the region Kidneys. over the kidneys, in addition to the semi-solid yellow pus, which was discharged on the integument, the function of the kidney became more active. The quantity of water voided was increased, while the amount of solid matter it held in suspension was so Solid matter. great that the urethra actually became blocked by it.

The salivary glands also excreted about five pints Salivary glands.

Solids. of liquid of varying character, which at times was of a sharp acid taste, and at times of a frothy and almost tasteless character. The sublingual glands were at one time the more active ones, while the parotid glands at other times appeared to be the principal organs responsible for this flow. The quantity of solid impurity contained in the eight pints thus thrown out by the liver and salivary glands, resulted in a great relief to the system, and was a decided help in the treatment. The diaphoretic effects induced at times were also of a marked character and contributed to the elimination of impure products from the system.

Discharge  
over painful  
spot, and,

Another interesting point was the discharge of a larger quantity of pus from a part of the abdominal surface, where a fixed pain existed, than from the surrounding parts. It may be counted on as next to a certainty that whenever an application is made over the chest, abdomen or other part, if a fixed pain has been felt at any particular point of the surface treated, the expulsion of pus will be most abundant at that point.

at first  
treatment,

Another point which was well marked was the extraordinary quantity of pus that was expelled at the first application. The dorsum was literally covered with pus, it being impossible to detect a single mark

Discharge.

of the instrument. A very copious discharge of pus is a common result during the treatment of a severe case. The quantity and quality of the purulent matter which is expelled from the system, is generally in proportion to the gravity or severity of the disease.

Co-  
ordination.

All power of co-ordination in the muscular movements had ceased before the treatment commenced.

But within ten days after the first application, the patient, while the eyes were closed, could extend either to its full extent, and bring the end of the index finger to the point of the nose. The legs were not strong enough to be properly tested.

The lightning pains, which constituted the severest symptoms, disappeared for eighteen days, after the first application; they then returned with some severity, owing to exposure to cold. But after this they returned no more.

Lightning  
pains.

The natural warmth returned to the upper and lower extremities within three days from the date of the first application, and remained permanently. Also the sensation, which was completely lost in all the extremities, and was very defective over the spine and back, resumed a normal condition. On the second application being made to the back, the patient remarked that he now distinctly felt the points of the needles, which he failed to do before.

Animal  
heat.

Sensation.

The sexual powers, after being lost for two years, returned gradually and became natural in about six weeks. It required some weeks longer to restore the body to its proper weight, because of the extreme emaciation to which it had been brought by the disease.

Sexual  
powers.

The restoration of the sight was rapid. The lack of power of co-ordination was very manifest in all the recti and oblique muscles of the eyes. The patient had no power to keep the eyes fixed, even for three or four seconds; reading was impossible, the eyes rolled upwards, downwards and on either side. But within a week from the commencement of treat-

Sight.

ment, the muscles were well under control, he could look steadily at a given point, and read comfortably.

Constipation.

The constipation, which had been stubborn, soon disappeared, so that the intestines acted naturally.

Power.

The power to grip, which returned to the hands in a few days, was extraordinary. He grasped my right hand to show me, and, to be frank, I am bound to say that I was glad when he released it.

The old great toe nails, which were limp and loose, were gradually pushed off by new ones. These latter started to grow after the restoration to the feet of warmth and sensation.

Return of influenza.

During the last two months there was a return of the influenza which attacked him over five years

Tingling in feet.

ago. Also the tingling sensation in the feet and other parts, which was one of the earliest symptoms of the disease, again occurred. My attention has been drawn on several occasions to events similar to these.

Influenza.

The patient stated that, after recovering from his first severe attack of influenza five years ago, he never felt so well as he had been previous to being attacked by it. It was, therefore, evident that some part of the morbid element which produced the attack still

Remnant of exciting cause expelled.

remained in the system. By the repeated applications of the Pyonex, this remnant was at length reached, and so stirred up that it could be expelled by the natural powers. During the time occupied in the process of expulsion, this remnant was finding its way to the surface, and all the symptoms of the old complaint were reproduced. After the morbid element was completely expelled the symptoms rapidly disappeared.

The tingling sensation in the feet first appeared

while as yet the system was not under the power of the disease, and before the exciting cause had attained serious proportions. But as by degrees the morbid element increased and gradually invaded the whole system, this early symptom gave way to total loss of sensation and other more serious conditions. The earlier applications of the Pyonex in the present case were fruitful in causing the expulsion of large quantities of purulent matter, and thereby the later or more severe symptoms of the disease were relieved. As by repeated applications the quantity of the exciting cause or morbid element in the system became further reduced, so the same symptoms that existed in the early stages, when the quantity of the morbid element was similarly small, again appeared. I have been struck with such an order of events as this on other occasions. I remember on one occasion, that a patient applied to me who suffered from lightning pains from the feet upwards, which made him cry out so loudly that many of his neighbours could hear him. These pains were precisely similar to those which accompany Locomotor Ataxia, and they may have been the precursors of the disease. But the more serious symptoms of the disease had not been developed, as he had been suffering only a few weeks. In this case one good application to the back was followed by the expulsion of a quantity of pus, which was notably of a more liquid consistence than what is met with in the later stages of the disease. There had not as yet been time for the pus to assume the more solid consistence, and more virulent quality, of that which is expelled in the later stages. But its ejection from the system, such as it

The tingling in the feet.

Recurrence of early symptoms.

Lightning pains.

The pus expelled.



was, cut short and annihilated the course of whatever affection might have been germinating in the tissues, as the pains immediately disappeared and never returned.

Pathology. In further considering the pathology of the case, we appear to be confronted by the facts, that several of the most distressing symptoms were promptly relieved, owing to the sudden expulsion of the large quantity of pus which took place after the first application. And allowing that this pus was the cause of the said symptoms, it becomes a matter of some interest to discover the exact locality where it was lodged, so as to be capable of creating such disturbance.

Localisation of exciting cause.

We have to begin with the muscular and ligamentous tissues, and the vertebræ with their intervertebral substances. Although we are willing to admit that all these parts may have been to a certain extent infiltrated with pus, we immediately dismiss from our minds the idea that such infiltration could produce the more severe symptoms herein recorded.

The cord. It is evident that the cord itself must also have been invaded. Infiltration of the muscles and their adjacent tissues by purulent products may lead to more or less pain in those parts, and at times inflammation, but as a rule nothing more.

Conclusion. We are, therefore, led to the conclusion that locomotor ataxia may be caused by the infiltration of the spinal medulla with purulent matter; and that this purulent product may be expelled by adopting certain measures.

The gradual return of sensation in the upper and lower extremities, points to some interesting changes

which were at the time taking place in the morbid condition of the tissues.

When the purulent infiltration of the tissues reaches a very advanced stage, every kind of tissue, including that of the nerves, is involved. We have in the case of locomotor ataxia to take into consideration the motor and sensory nervous systems as becoming affected independently. The function of the sensory nerves is the first to become affected and temporarily destroyed; the motor nerves appear to have a greater power of resisting the toxic effects of the invading pus, and preserve their function for a much longer time. Needles could be thrust into the hands or feet without being felt, whilst the patient still had power to grasp an article with the hands and move the feet, but on the partial removal of the pus from each extremity, the sensation was so perfectly restored that a hair could be distinctly felt between the fingers, whilst the faintest touch of the attendant's fingers could be felt by the toes. Although before this first expulsion of the pus, the muscular power was greatly reduced, within a few days it was so perfectly restored that his grasp of the hand could not be borne. Yet in the case of the lower extremities the return of power, although perceptible, was small. The reason for this at first apparent anomaly will be quite satisfactory, when we remember that the nervous communication between the fingers and the brain was defective, solely in consequence of the purulent infiltration of the nerve tissue; and on removal of the pus perfect restoration became established. But in the case of the lower extremities a perfect restoration of the motor nerves was not possible, in

consequence of there existing the lesion of the dorso-lumbar portion of the spinal cord, which is characteristic of the affection.

We are also led to the conclusion from the foregoing facts, that the posterior columns of the cord, which appear on *post-mortem* examination to be most affected, mainly consist of motor nervous tissue.

A further note of explanation may not be out of place, to account for the gradual return of sensation from the shoulders to the fingers and from the hips to the toes.

The application of the Pyonex on the back became, as it were, a point of attraction for the pus from every point of the system, somewhat similar to that of a magnet to steel. As the operation of the expulsion of the pus gradually proceeded from the shoulder to the elbow, so the nerve tissue became unloaded, and its natural function returned. The patient stated that there was a stoppage of returning sensation of an hour or two at the elbow, and another stoppage in the palms of the hands. This may be explained by the fact of the presence of so much ligamentous and fibrous tissue in those two localities, which acted as temporary barriers to the upward flow of the pus.

#### LOCOMOTOR ATAXIA.—CASE 2.

History.

A patient, aged 41, by occupation a butler. Below middle height, thick set and of very strong build. Face pale, with a pasty skin and an expression of despair. Always stoops and looks on the ground, cannot keep himself straight or walk upright. Eigh-

teen months ago had syphilis and Hunterian chancre, and was under treatment eleven months. Eleven years ago was attacked by eczema, large pustules being thrown out, principally in the extremities, filled with a pestiferous matter. He was laid up about ten weeks, during which time the arms were firmly flexed, and he could bear no weight on his feet. Two years after, his body was covered with patches of red scabs, and he was unable to work for twelve months. The eyes were affected and turned outwards. The eyelid remained closed for three months, and a year after the right lid remained closed for three months. His affection was at this time pronounced to be Locomotor Ataxia.

The sensation of everything to the hands was like velvet; the legs began to weaken, and he staggered while walking. Later, he was unable to stand, and had to sit and slide in order to get downstairs. At the present time, he has difficulty in rising from his seat. He can walk slowly for a mile and is then exhausted. The sexual powers disappeared several months ago. The water has escaped from the bladder by night and day. He is always constipated and is obliged to take cathartics. Pulse 92. He is able to close his hands, but cannot grip anything. There are large red patches on the face, nose, forehead, and back. He cannot walk with closed eyes. There is absence of the patellar reflex.

The first application of the Pyonex was made to the chest on June 9, 1900. This resulted in a discharge over the whole of the integument treated, every part being covered by pustules. A second crop

Eczema.

Scabs.

Eyes

Sensation.

Sexual  
powers.  
Water.

Hands.

Treatment,  
first.

Second  
crop.

of pustules appeared on the fourth, fifth and sixth days.

Improve-  
ments.

A marked improvement now appeared in many of the symptoms. The involuntary escape of water from the bladder has ceased. He is able to grip tightly with his hands ; he can brush his boots, which he was before unable to do. The feet are stronger and have a better hold on the ground ; he can walk firmly without staggering. He can rise from the chair without using his hands. The red patches in the face and back are much fainter in colour. He feels better in every respect, the body is lighter and a load has apparently been lifted from him, and his former interest in life has returned.

Bladder.  
Grip.

Feet.

Strength.

Red  
patches.

Second.

Discharge.

June 15.—An application was made on each side of the spine. The discharge which resulted was of less quantity than that which came from the chest. This sometimes happens from the patient lying on his back too much and rubbing off the oil.

Third.

Three  
miles.

June 22.—An application was made to the abdomen, which resulted in very little discharge. On 27th he walked three miles, the longest distance for ten months.

The chest and back were treated on June 29 and July 6, there being a free discharge from the chest only.

Phalanges.

July 13.—He has for thirteen years suffered from an intense irritation of the skin of the third phalanges, of all the fingers and toes. So great was it that he would scratch off the skin and make the whole of the joint raw, and finish up by hammering his knuckles against the wall. He complains that while he is quiet

Cold arms. the arms are as cold as marble.



On July 13, a copious discharge resulted from an application to the chest. On August 16 and 22, the chest and left arm were treated. This last application produced a copious discharge, which was at once followed by an improvement in the power and flexibility of the fingers. The general tone of the system and the powers of endurance continue to improve.

Sixth.

Seventh  
and eighth.

Fingers.

The chest, left arm, right leg and thigh, were treated on September 24, October 1 and 8. The object in treating the upper and lower extremities being to restore the circulation and the natural warmth. He is now able to go up and down stairs, taking one step each time with each foot, and without touching the handrail. He never staggers when walking, and instead of leaning forward, is more upright. The pasty and pale face has given way to a pink and healthy colour.

Tenth.

Eleventh.

Twelfth.

Improvements.

The last application to the thigh and leg produced a good discharge. The limb feels lighter and not so cold.

Thigh.

On October 15, the chest was treated for the sixth time, and on the 22nd, the right arm.

Thirteenth.

Fourteenth.

This last application was given in consequence of the patient's complaining of three fingers of the right hand becoming cold and paralysed every night. It resulted in a discharge of thick serum, which stiffened whatever linen it touched, just as is done by thick starch. A few days afterwards, the cold and torpor of the limbs disappeared, and the natural warmth and strength returned.

Fingers  
benumbed.

Warmth  
restored.

October 30.—An application was made to the left thigh and leg, which caused the thigh and ankle to swell considerably, and produced a profuse discharge.

Fifteenth.

Thigh and  
leg.

The patient remained in bed for a week, finding it the most comfortable place.

Sixteenth  
and seven-  
teenth.  
Eighteenth.

Fingers.

On November 5 and 24, the left arm was treated, and on January 2, 1901, the back. Since November 24, there has been a succession of scabs and discharging raw surfaces, on the fingers of both hands and on the left arm. The discharge from the arm was of greenish colour, and of a sickly odour. Quite a quantity of impurity has thus been eliminated from the system.

Nineteenth.

Pains.

January 11.—The seventh application was made to the chest. A copious discharge resulted from this, as well as from the last application on the back. These last two applications produced some rare effects, in making him give sudden starts, and in setting up severe irritation. Darting pains passed through the chest, and radiated and revolved in all directions. He has now a better expression, walks straighter and is more active.

Twentieth.

Sexual  
powers  
restored.

Walking.

Palms.

January 18.—An application was made to the right arm. The sexual powers which were lost are now becoming natural. The face has the appearance of health, the gait is steady, and he is quite upright. The general strength is greatly increased; he can walk three miles with comfort and has no pain anywhere. The right eye is not so strong as the left. There is some irritation in the palms, which disappears on rubbing them.

Twentieth  
and twenty-  
first.

Chaul-  
moogra.

January 30, the left arm was treated. February 6, the right arm was treated. The skin of the palms is very dry and full of cracks. Prescribed Ol. Chaulmoogra to be applied frequently. A decided improvement followed, the skin remaining moist, and

the cracks becoming fewer. The hands, which were a source of constant discomfort, especially in bed, are now comfortable. Twelve more applications were given up to the twenty-third day.

Hands.

Thirty-fourth.

June 26.—The left arm was treated. He returned on this day to town, after a stay of three weeks at Bexhill, improved in all respects. There are no more cracks in the skin of the hands or fingers. He is stouter, stronger, and has more colour, and is quicker in his movements. But he feels that he had better have a further course of treatment before taking a situation.

Thirty-fifth.

Effects of a change.

Three more applications were given up to July 26. The palms, which were quite well while he rested at Bexhill, are again showing broken skin owing to his keeping them wet while washing up crockery ware. On rising up, after sitting for a considerable time, he cannot readily straighten himself, or walk well, for the first few yards. This is due to his standing and walking beyond his strength.

Thirty-eighth.

Rising up.

Two more applications were given, up to August 13, one to the left leg, and one to the lumbar region. Little discharge resulted from the last application, but great benefit. He can now straighten himself all right on rising, and he has not felt such strength in his back for two years. Says he felt a peculiar sensation through the whole back while the treatment was working, also a tingling which passed from the shoulders to the fingers, which are now quite free from their former torpidity.

Fortieth.

Lumbar region.

Effects.

The lumbar region was treated. A plexus of purple veins which formerly covered the lumbar region has considerably dwindled, only a few being left.

Forty-first.

Plexus.

- Forty-fifth. Four more applications were made up to October 9, after which the patient expressed himself as feeling well enough to resume his occupation. He has been comfortably at work now for about seven months.
- Resolution.
- Total applica-  
tions. Forty-five applications were given in all. Of these, nine were applied to the chest, eight to the back, ten to the left arm, nine to the right arm, two only to the right leg and five to the left, and one only to the abdomen. During the first eight or ten weeks, the chest received more applications than any other part, the reason being that a more copious discharge was obtained from this part. With restless sleepers this is often the case, the chest being better protected from not being lain on. An unusual number of treatments were required for the extremities, owing in part to the constant cracking of the palmar integuments, and in part to the marbled state of the muscles, which were hard and cold. On the patient's receiving definite instructions that he must refrain from putting his hands in water so often during the day, and keep them dry, the fissures in the skin soon disappeared. This broken state of the skin had not only kept the hands in a wretched condition, but also secondarily affected the whole system, causing quite an amount of nervous depression and retarding recovery.
- Chest.
- Extremities.
- Hands.

#### LOCOMOTOR ATAXIA.—CASE 3.

- History. A patient, aged 46, by occupation a sail maker, stated that seventeen years ago he began to feel burning and scalding pains in the back, from the nucha to the lumbar vertebræ. In two or three years the pains extended to the groins, thighs and legs.
- Pains.

There was also pain in the knee joints, but it was most severe in the muscles. A few months after being attacked he was unable to wipe his feet on the mat. Four years later he was unable to run, and in six or seven years could not walk steadily.

During the last three years he has been unable to walk without help ; if he attempts to walk he falls. During this period he has been attacked by a lancinating pain, two or three times in each year, in the centres of the feet and wrists ; the pain is like the boring of a gimlet.

For the last twelve months he has had no sensation in the right hand. He can grasp an object, but does not know that he is holding anything unless he sees it. He has no sensation in the feet, and does not perceive it if they are stepped on, or receive a blow. Sensation is very dull over the whole of the back and chest, he does not perceive the prick of a needle, unless it is applied with some pressure.

The bowels have been costive for six years, not acting except by the assistance of cathartics.

The sexual powers ceased seven years ago.

The bladder. The water has escaped every night during sleep for eight or nine years. Also during the day, any severe exertion produced the same effect.

He has no appetite. The stomach is weak and irritable. He is unable to take chops, steaks, or other animal food. His diet consists of milk, boiled eggs and beef tea. He has vomited every morning for sixteen years ; any exertion or pain excites the vomiting.

His sight is weak. He is unable to exercise it for long at a time.

Power.

Sensation.

Constipation.

Sexual powers.  
Bladder.

Stomach.

Sight.



Power. He is unable to rise from, or sit on, a chair without assistance. In order to go down stairs, he sits on a step and slides down to the next. He is attacked by giddiness if he attempts to move about.

Brain. The memory and power of thinking are in fair condition.

Temperature. The feet, arms and legs are always cold. He used to weigh 145lbs., but has wasted about 35lbs. since first attacked.

Treatment. October 10, 1895.—The Pyonex was applied on both sides of the spine.

October 11.—The stomach urged last night for two hours. He slept, lying on each side alternately, all the night, which he has been unable to do for years. The feet and legs, instead of getting cold as they have always done hitherto, retained their natural temperature.

Power. October 12.—He rose from the chair and sat down again several times with ease. He walked from the parlour to the hall and back; went down stairs and came up again, the first time for eighteen months. Has more grip with his feet. There is a marked increase of motion in the toes. There is more strength in the fingers and arms. The treatment was now unavoidably discontinued for twenty-six days, the state of the patient, meanwhile, continuing much the same.

Sensation. November 5.—A second application was made on each side of the spine. The perforations of the instrument were plainly felt while it was being applied, which was not the case at the first application.

November 7.—Sensation has returned to the feet, he can detect the touch of the finger to the sole of

the foot. Sensation has also returned to the right hand, so that he now distinctly feels a hair between the finger and thumb.

The sight is stronger, he can see with more Sight. clearness and read for longer at a time.

The bladder has emptied during sleep by night Bladder. only twice since the date of the first application. While voiding it he can stop and go on again.

The intestines have acted regularly every day for Intestines. a week, without the aid of medicine.

The power of locomotion is about the same. Loco-  
motion.

The ankles were formerly so weak that they gave Ankles. way, if he attempted to stand without having his boots firmly laced. He can now walk with bare feet.

NOTE.—The symptoms to date show a decided improvement in the functions of the motor nerves, but that of the sensory nerves is still more marked.

November 19.—A third application was made to the back.

November 22.—The eruption was moderate in quantity, as before. He is able to hold a hatchet firmly in the right hand, and chop firewood. He has been out walking twice. Walked about three hundred yards, stopping only once, whereas formerly he had to stop a dozen times.

He has more sensation in every part of the body. The same kind of pains in the arms, hands and thighs, which he had at the commencement of the disease, are now of frequent occurrence.

NOTE.—The recurrence of these pains is a very interesting symptom, and indicates that the various stages of the disease are being repeated, the order of their occurrence being reversed.

Owing to my leaving the neighbourhood I was unable to continue the treatment.

## CASE 4.

History. A patient, the Hon. —, aged 34, left for South Africa. December, 1899, in perfect health, and served as a trooper for nine months. He was subject to much exposure to the sun by day and severe cold by night. Being without tents was compelled to bivouac, sleeping with only a blanket and awaking stiff with the cold. Food was short, the marching was severe, coupled with hard work. The second Sunstroke. month after arriving he had a slight sunstroke, and three months later began to feel loss of strength in the legs. In the eighth month he went to Cape Town feeling utterly exhausted, but after a few month's rest, doing office work, he returned to the front, feeling better, but still with loss of strength. Five months later he was compelled to return to England, and remained home four months.

Fall. The characteristic jerk of Locomotor Ataxia was now noticeable when walking. In February, 1902, he returned to South Africa. He had a severe fall from a cart, since which he has never been free from pains in the back, shoulders and arms, which at times are very severe. He returned to England in August, 1905, being no longer able to work, and was unable to support the body, owing to the pains in the back.

Physique. He is tall, being nearly six feet; remarkably well-formed, large boned and exceedingly muscular, in fact, a rare specimen of a perfect athlete. He has never suffered from any disease of a venereal

character, and with the exception of the present affection, has been in the best of health all his life.

The severity of the symptoms was now increasing Symptoms.  
month by month, they were as follows :—

The patellar reflex on percussion was altogether Percussion.  
wanting. There was inability to go up stairs with- Ascending.  
out the aid of the hand on the banisters, and  
great care had to be taken in descending. He was  
able to stand with the eyes closed and the feet touch- Standing.  
ing, but there was a considerable swaying of the  
body. The gait was irregular, having the character-  
istic jerk, and the lack of power to command the Jerk.  
movements of the legs. He complained of quickly  
becoming tired and weary, though he had taken  
but little exercise. He had to make quite an effort  
to turn in bed. A considerable mental effort was Turning.  
necessary to guide the feet so as to take the proper Mental  
steps when walking, and he was unable to prevent effort.  
their being straggled and imitating the grotesque  
motions peculiar to the disease. When walking, he Looking  
is unable to turn back or turn his head for fear of back.  
falling. He cannot write in a straight line as Writing.  
formerly, nor form the letters well. In other respects  
he is normal. It is now five years since the earliest Five years.  
symptoms of the loss of power in the legs was  
noticeable.

*Treatment.*—Pyonex Treatment was commenced First  
on October 9, 1905, by an application on the right application.  
calf, which produced pustules all over the surface  
which was treated. He reported on the second  
day that he was “able to pull himself together Result.  
better.”

Second  
application.

Three days later a test application was applied to the dorsal region of the spine, with a view to ascertain the tolerance of the treatment in this locality. The usual pustular discharge resulted, and no inconvenience was felt.

Third  
application.

The following day a Pyonex application was made to the lower half of the back. Pustules were produced over the whole of the integument perforated, as well as between the perforations. Two days later he reported being able to go up and down stairs with less difficulty, also having greater command over the motions of the legs and better grip of the banisters. He could walk better. He also made the interesting statement that the mental effort necessary to guide the feet was perceptibly less.

Mental  
effort.

Fourth  
application.

On the seventh day of treatment an application was made to the left calf. Two days later he reported being able to go up stairs without touching the banister, and does not feel the accustomed weariness at the close of the day.

On the ninth day reported that when walking he is able to look back and still walk on. He had a sharp fall from slipping when getting out of his bath; but the shock did not affect his walking power.

Fifth  
application.

On the tenth day the Pyonex was applied to the lumbar region, and resulted in a copious discharge of pus.

Sixth  
application.

On the following day an application was made to the left arm. He can now stand with closed eyes and feet touching, with scarcely a perceptible swaying of the body.

Seventh  
application.

On the thirteenth day the Pyonex was applied



to the dorsal region. He reported being able to write in a straight line instead of slanting; also there has been a steady increase of strength throughout the system since the commencement of treatment.

Further treatment was now suspended owing to his having to return to South Africa on the 4th prox., in order not to exceed his leave of absence. His intention is to return to England as soon as possible in order to continue the treatment. Prescribed to be taken during his absence:—

F. E. Serenoæ Serrulatæ ...	...	..	ʒi.
F. E. Berberis Aquafol. ...	...	...	ʒss.

Ex cyatho aquæ mane nocteque.

After this treatment he returned to his home and wrote the following letter:—

“I am writing to inform you that the last Pyonex application which you made on my chest has been most successful; a great number of pustules appearing with a good discharge of pus.

Letter  
written by  
patient.

“Mere words on my part can never express the gratitude I felt nor the feelings of my family when they saw me. The difference in my walking powers and strength in general is a source of wonder to all who see me.

“As a rule English people are taught to hide their emotions, but I never was able to do so, and my feelings quite overcame me when I bid you good-bye, and the words I wanted to say stuck in my throat, but I trust you understood—and I think you did—how full of gratitude and thankfulness my heart was.

“I now am almost nervous about using this new strength I possess, being like a man with a beautiful and valuable piece of china who thinks he may break

it if he looks at it. You will be glad to hear that the improvement continues and has done so since leaving Penzance. I have now experienced such a relief both in body and mind that I think and talk about nothing else."

This letter is cited with the view of laying before our readers the actual testimony of the patient, independent of a professional view of the therapeutic effects of the treatment.

Resumption of treatment after six and a half months.

He returned from South Africa and treatment was resumed in six and a half months.

At this time the points of a compass three inches apart when pressed against the back appeared to him as one point.

No return of pain.

The pain in the left shoulder which had lasted for two and a half years has never returned. After five further applications he reported that it was no longer necessary for him to look at his feet when walking.

Improvements in spinal communications.

It will readily be recognised by these improving symptoms that the spinal communications and the brain had undergone decided improvement.

Forty-seven applications.

Forty-seven applications were given during the next twelve months, there having been various interruptions, which were caused by an attack of influenza, a carbuncle over the spinal column, and visits to his home for the purpose of rest, and excessive exercise. The present condition of the patient is on the whole very satisfactory.

Improvements.

His general health is extremely good and he never felt better. He can walk fairly long distances without feeling weariness. There is just a perceptible lameness of the right leg and he has not so perfect

a control over it as over the left. He can go up and down stairs with perfect ease, but prefers to lay his hand on the banister when coming down for an additional sense of security.

He used, when moving about a room, to lay his hand on whatever piece of furniture was nearest, but long ago he ceased to do so.

There is a marked improvement in the clearness of his articulation of speech, showing an improved command over his lingual muscles. This improvement was particularly manifest after the last application of the Pyonex to the back of the neck, throat and upper part of the chest. Tongue.

The patient is now so nearly approaching complete recovery that it is a matter of little interest to put him through the ordinary tests which are used when diagnosing a case of Locomotor Ataxia.

Almost the only one which is still recognisable is a little sluggishness in the patellar reflex of the right leg, that of the left leg being natural.

The patient is still under treatment at the time of writing.

#### CASE 5.

Age 34, 6 feet in height, thin. Nine years ago he was attacked by syphilis, which was followed by a terrible course of headaches and symptoms of Locomotor Ataxia. Also iritis in both eyes. The headaches returned without intermission for six weeks, during which time he was in a private hospital. Partial paralysis of the legs followed. Four years later the legs completely gave way, so that he was unable to walk. He can move about the house with the aid of two sticks, his body being bent forward

History and symptoms.  
Iritis.  
Cephalagia.  
Legs.

	almost to a right angle. He has been wheeled about most of the day in a bath chair for the past two years. Pulse 100. The upper part of the body is but little affected. Very constipated all his life, only one operation per week. The left leg is the more paralysed, and he is unable to move the left toes or bend the foot. He suffers much from the cold condition of the lower extremities and feet. The body also is cold. The characteristic jerk is present.
Pulse.	
Toes.	
Cold.	
Jerk.	
Standing.	He cannot stand still alone, and falls if he attempts to move without the sticks. The patellar reflex motions are absent. The bladder empties itself nightly during sleep. The motions constantly escape owing to weakness of the sphincter. A sudden noise starts and frightens him. The spinous processes of the vertebræ are prominent, owing to emaciation, which extends to all the muscles. He has to make an effort to turn in bed, and takes a long time to go up or down stairs. The sexual powers are not lost. He is often fly-fishing while sitting in his chair, and is learning water-colour painting as a pastime.
Bladder.	
Noises.	
Emaciation.	
Sexual powers.	

#### LOCOMOTOR ATAXIA. CASE 5.—TREATMENT.

Treatment.	Treatment was commenced by a small application over the scapular region, and during the first thirty-five days, ten small applications were applied between the nucha and the sacrum. The discharge was yellow and of the ordinary consistence, but never profuse. At the termination of these ten applications, the improvements were as follows: he can turn more easily in bed. The legs and feet are not so cold. The natural warmth extends all the way to the right foot and to the left knee. He feels that the whole body
Ten applications.	
Improvements.	

is stronger. The muscles of the thighs and legs are increasing in volume. The vertebræ and dorsum are also better covered, so that the spinous processes are not prominent as before. He takes less time to dress than formerly, twenty instead of thirty minutes. He can go up and down stairs in about half the former time.

During the next three months, twenty applications were made to the back, chest, neck and shoulders. The results were, a further general increase of strength and muscular development, more sensation in the feet, and a more conscious communication between them and the brain. He has not to keep his eyes so fixed on them when walking, and he is now nearly upright. He can stand without support, and when sitting his legs and feet, instead of turning outwards, retain almost a natural position. He says he feels exceedingly well. He can go up steps with one stick instead of two. During the last three months the bladder has not emptied itself once during sleep, nor have the motions escaped involuntarily. The pulse for several weeks has been steady at 76. He is no longer troubled by constipation, having an action about every other day. He reports also having been engaged for an hour and a half singing songs to an accompaniment, and says it is the first time in his life that his voice ever had strength for singing.

Twenty applications.

Improvements.

Standing.

Bladder.

Pulse.

Voice.

The forty-first application was made in the dorsal region, and the discharge was freer than usual. The result was a perceptible increase of power to move the legs, and he could walk better. During the eleven following days he was somewhat weak, in



consequence of this free discharge happening so near the spinal column.

The fifty-first application was made to the left leg and foot, in consequence of there being an attack of gout in the foot and great toe. The foot swelled considerably, and as the swelling subsided the gout disappeared, and there was an increase of motion in the foot. The discharge of pus was free, on the whole of the calf and foot. It was interesting to notice its change of colour. Immediately under the knee it was light yellow, which became gradually darker on descending the calf to the foot, where it was crimson. It furnished a good example of the gravitation of the heavier and more virulent pus to the lowest parts, and the prompt disappearance of the morbid symptoms on its removal.

The sixty-eighth application was made on the left arm to relieve an attack of gout in the third and fourth fingers. In five days the gout disappeared. The patient was now able to move the right big toe, the first time for some years.

In all, ninety applications were made, twenty-four to the nucha, dorsal, lumbar and sacral portions of the spine, and the other to the neck and every part of the upper and lower extremities. The duration of the treatment was just twelve months, when owing to private circumstances the patient went to reside in another part of England.

Remarks.

He could not attempt a walk out of the house from lack of power in the legs, but the hands and arms were quite strong, so that he could push about his chair instead of hiring a man. The nervous

Noises.

system was so strengthened that sudden noises no

longer startled him; and when painting he was able to guide the brush accurately to the exact spot at once, instead of having to make several attempts. Painting.

During the latter months of treatment, the progress, although slow, was perceptible. Sensation and power of motion were gradually returning to the left foot and toes, which had been so paralysed, and as far as could be judged from all the indications, the probabilities of a complete restoration were in his favour. The prominent fact that showed a necessity for the continuation of the treatment, was that every Pyonex application was followed by a good discharge of pus. The disease could never be conquered until all this impurity was finally got rid of. Prognosis.

This pus was several times subjected to most careful microscopical examination. When magnified a thousand times, it showed long, well-marked lines of micrococci. These minute bacteria were adjudged as being the probable exciting cause of the affection. Need of further treatment.

Micro-  
scopic  
examina-  
tion of pus.

## CHAPTER XV.

### PART 2.

CHRONIC CEPHALALGIA.  
EPILEPSY.  
HYPOCHONDRIASIS.  
MENINGITIS.  
NEURITIS.  
PARALYSIS.  
SCIATICA.

### CHRONIC CEPHALALGIA

#### CASE 1.

History. A lady, aged 26, engaged in teaching, stated that for four months she had suffered from daily attacks of headache, which lasted for three or four hours or more. It was a struggle for her to continue in her position, and she thought of resigning. A vacation of a fortnight improved her condition, but on the resumption of duty the aching returned.

Treatment. The Pyonex was applied over the back. The pain at once ceased. The next day she was quite happy and full of spirit, there being no pain. But on the following day she was disheartened. The pain returned as severely as ever. She "wished the treatment to Jericho." On the fourth day, however, there was no pain and she felt splendid. Weeks and months passed, but there was no headache, and she was well in all respects. The morbid matter which

Second day.

Third day.

Fourth day.

produced the aching had been expelled from the system. But it may be asked, Why did the pain return on the third day? This often happens after applying the Pyonex, but no notice should be taken of it.

The effect of the treatment is to dislodge and stir up the exciting cause of the affection, and while this is being done, and the morbid matter is making its way out of the system, it is only natural that the symptoms of the affection should be reproduced in a greater or less degree, but as soon as the exciting cause reaches the surface, the power of the affection is broken. Pathology.

CEPHALALGIA.—CASE 2.

A lady, aged 35, had been afflicted for ten years with severe attacks of nervous headache. The paroxysms usually lasted for several days, during which time she was incapacitated from attending to any duties. Various treatments had been resorted to without beneficial effect; she despaired of obtaining relief. History.

The Pyonex was applied to the back and chest and she experienced a considerable degree of relief. The application was repeated three times, a quantity of pus was expelled from the system, she was completely relieved, and the cure was permanent. The duration of the treatment was six weeks. Treatment.

The relief which is extended to cases of this nature by the application of the Pyonex, points to the fact of a certain amount of purulent infiltration of the cerebrum and cerebellum. When the former is principally affected, the pain is referred to the lower and back part of the head. It is by no means neces- Note.

sary to treat the scalp in order to get out this pus. The back of the neck and scapulæ being perforated, the pus will readily descend this distance from every part of the cerebrum. If the lower perforations contain a fair quantity of pus, the treatment should be carried still lower until they contain scarcely any. The discharge will always be most abundant and thickest in consistence nearest the top, and gradually dwindle in quantity and quality in the lower rows of the perforations.

Epilepsy.

### EPILEPSY.

It is not our present object to go minutely into the details of this remarkable affection.

Benefit  
trivial.

As the benefit that may be derived by its treatment from the Pyonex is but trivial, there is no special reason for dwelling upon it at length.

Causation.

This "Falling Sickness," or succession of fits, may be produced by any sudden or violent impression on the mind. A fright or a sudden joy may cause a fit and result in confirmed epilepsy. But frequently the cause is totally obscure. An unnatural drain upon the system, or certain lesions in the brain and other parts, also round worms and tape worms, may be the cause.

Duration  
of fits.

The fits generally last a few minutes. The person attacked usually utters a piercing shriek, and falls to the ground as if struck by lightning. Severe convulsions follow, the limbs being twisted and the features contorted; the tongue is often bitten. Unconsciousness is a constant symptom. As the attack ceases, consciousness returns, and the subject is often unaware that anything has happened. In rare cases

Tongue  
bitten.



the fits last an hour, and the writer has known a case where the fit was over thirty hours' duration.

It is the rarest occurrence for an absolute cure to be effected under any treatment. Relief rare.

The writer has treated over a hundred cases and has found more improvement to result from the free administration of Bromide of Potassium than any other drug. Potass.  
Brom. It is often of marked benefit to combine this with some other preparation, such as Tincture of Aconite and Valerianate of Zinc and Spt. Ath. Chlor. The patient finds it more agreeable to the palate and system to have the medicine changed frequently.

In nine cases out of ten the fits may be controlled by this treatment, but in some cases not only does it do no good, but actually increases the frequency of the attacks.

Vigorous massage on each side of the spine, and subsequent application of electricity three times a week, is a great help in warding off the attacks. Massage  
and elec-  
tricity.

The system is nearly always charged with morbid matter, which may be expelled in quantity by applying the Pyonex to each side of the spine. Not  
relieved  
by the  
Pyonex. The general effect of this is good. The frequency of the attacks is diminished. But any number of applications will not eradicate the disease. This fact goes to prove that it is not caused by a toxic condition of the system, and that the unbalanced state of the nervous system, to which the attacks are due, depends on other causes.

### HYPOCHONDRIASIS.

The hypochondriac is a victim of delusion. Victim of  
delusion. He labours under the morbid apprehension of the existence of, or the liability to, some kind of disease which

Symptoms. may be of a trifling or serious nature. At times there exists an overstrung feeling of extreme delicacy of constitution, or an extraordinary susceptibility to any kind of ailment.

Subjects affected. The delusion is generally accompanied by melancholia, or depression of spirits, and it is in vain that the attendant physician explains to his patient that every organ in the system is in a healthy condition, and that no ailment exists. Persons of sound judgment and good mental power are as liable to the delusion as those who are weak-minded.

Treatment. It is easier to persuade such patients that their supposed disease can be expelled from the system by the application of the Pyonex, than it is to successfully combat their delusion. The application of the instrument acts as an extraordinary alterative on the nervous and circulatory systems, and the patient believes that the small amount of matter which is expelled was the cause of her trouble, and her mind is set at rest.

Parts to be treated. The whole of the back, chest and abdomen should be treated.

### MENINGITIS.

This term is applied to affections which are characterised by an inflammatory condition of the membranes which envelop the brain and spinal cord.

Cerebral. Cerebral meningitis, which refers to inflammation of the membranes of the brain, and spinal meningitis, which refers to those of the spinal cord, may be either acute or chronic. Cerebrospinal meningitis includes a combination of most of the symptoms of both of these.

There are other varieties of this affection, such as

pachymeningitis, which may be *External* or *Internal*. The *External*, being characterised by the thickening of the dura mater, is always suppurative and may be acute or chronic; while in the *Internal* an adventitious membrane is formed on the inner surface of the dura mater.

Pachymeningitis.

Another variety is the tuberculous, in which miliary tubercles are formed in the pia mater; while yet another variety is described as cervical hypertrophic pachymeningitis, in which layers of new connective tissue are formed on the inner surface of the dura mater.

Tuberculous.

Cervical hypertrophic.

It is easier for the lesions which are caused in these various types to be discovered during an autopsy, than to determine what is the exact state of the parts in a patient under treatment.

Not easy to diagnose.

It is not our object to enter minutely into the consideration of the symptoms which may form the distinctive features of the several varieties of this affection, but simply to notice some of the more prominent points, and others which are more or less common to all; and then pass on to consider what are the benefits which we may expect to derive from the application of the Pyonex.

Object.

In the case of cerebral meningitis, the inflammation goes on increasing in strength until serum, pus and fibrin are thrown out. Intense pain in the head, delirium, vomiting, a high fever, a temperature of 104°, flushed face and intolerance of light.

Cerebral meningitis.

Symptoms.

Paralysis in the form of hemiplegia, or of a less severe type, may occur before the supervention of the coma which ends in death.

The disease is usually fatal, and averages eight or nine days in duration.

### SPINAL MENINGITIS.

Usually  
accom-  
panies  
other  
diseases.

Acute attacks of inflammation of the membranes which envelop the spinal cord, are commonly an accompaniment of other inflammatory affections, such as typhus and typhoid fevers, and pneumonia. Owing to the severity of its symptoms it may, however, prove more destructive of life than the disease by which it has been induced.

Symptoms.

An acute lancinating pain originates in the spine and radiates to the extremities. There are spasmodic contractions of the muscles, those of the back of the neck producing sudden jerks which draw the head backwards, which is termed opisthotonos. The inflammation, as in the cerebral variety, proceeds until fibrin, serum and pus are formed.

In the course of a week the disease may prove fatal by apnœa.

Chronic  
form.

In the chronic form there is thickening of the pia mater and arachnoid. The cord no longer being equal to its function, there is paralysis of the extremities and incontinence of the urine and fæces.

Causes.

This affection is commonly produced by the inordinate use of spirits, by exposure to cold, or by an injury, which, at the time, appeared but trifling.

Pain.

Severe pain is a characteristic symptom in all cases of meningitis, also high fever, drowsiness or coma.

Very fatal.

The disease is of a remarkably fatal type, and medical treatment does but little to allay its progress or palliate its symptoms.

The main objects of treatment are depletion and revulsion. If these are effectually carried out, we can entertain some hope of bringing our patient safely through.

Objects of treatment.

### TREATMENT.

In the application of the Pyonex in the treatment of cerebral meningitis we labour under a disadvantage in not being able to make the artificial pores in such proximity to the affected part as we could wish. As the treatment cannot be applied to the scalp, we must content ourselves by applying it to those parts which are nearest to it. In any case the skull will intervene between the part treated and the seat of the inflammation.

The scalp cannot be treated.

The whole of the neck is closely treated, the perforations being carried up to the roots of the hair. The chest, abdomen and back should also be treated.

Parts to be treated.

In the case of spinal meningitis the course of treatment is more simple, and its curative effects are more rapidly developed. It is usually sufficient to apply the Pyonex on each side of the spinal column from top to bottom, and then to apply it in the usual way over the whole of the back. If, however, the symptoms exact it, the whole of the chest and abdomen should also be treated.

Treatment more simple.

Parts to be treated.

The effect of the treatment in each case is three-fold. It causes *depletion*, *revulsion* and *expulsion*.

The three-fold effect.

The blood is diverted from the inflamed meninges to the whole of the integument in which the artificial pores have been made. This diversion of blood is so great that the congested and inflamed parts are relieved, and there is a corresponding improvement

Depletion and revulsion.



An exit  
made.

Expulsion  
of pus.

The class  
of morbid  
element of  
minor im-  
portance.

An open  
channel  
availed of.

The  
counter-  
irritation.

Treatment  
of the other  
varieties.

in the symptoms. Another and important point effected is that an exit is made for the escape of the toxic agent, which is the exciting cause of the disease. Thick pus of a virulent character is rapidly expelled in copious quantities. In this manner the tissues, which are laden with morbid material, are quickly unburdened.

It has not yet been discovered what is the exact nature of the morbid agent which produces this terribly fatal malady. But whether it be a micro-organism of a vegetable or animal origin, or a blood impurity of some other description, is a question of minor importance, as far as regards its treatment by the Pyonex. Experience teaches us that whatever be the nature of the poison, the system readily avails itself of an open channel, whereby a virus may be expelled. It is also clear that the extraordinary counter-irritant effect, which diverts so much blood from the internal or more central parts to the skin, must have the effect of partly starving the inflamed part of blood, and relieving the intense congestion, which results in the product of inflammation.

It is not necessary to allude to each variety of meningitis in detail, for the purposes of its treatment by the Pyonex. The general directions already indicated will serve for each case, with such variation as the symptoms may warrant.

#### SPINAL MENINGITIS.—CASE.

History.

A young lady, aged 14, had a fall during her summer vacation, which resulted in an injury to the spine, and subsequent spinal meningitis. She had been lying on her back for three weeks, unable to

move. She refused food, and from day to day continued in a semi-comatose condition, and indifferent to everything. She was rapidly growing worse, and wasting away. Several physicians were called in consultation, and the sole opinion expressed was that no hope of recovery could be entertained, and that death must supervene in a short time. Grave symptoms.

The Pyonex was now applied over the whole of the back. The night was passed quietly, and the next morning, as soon as she opened her eyes, she asked for food. She had tasted nothing solid for ten days. Her appetite increased, and she continued to eat at frequent intervals, and so rapidly regained strength that on the third day she was able to sit up. The discharge of pus was thick and copious. Treatment.

The improvement continued steadily. A second and third application of the Pyonex were made at intervals of ten days, after which she was restored to complete health. The duration of the treatment was four weeks. Second and third.

In this case the comatose condition may have been due to effusion in the sheath and pressure on the cord. The Pyonex treatment is very effective in rapidly removing effused serum from joints and other parts. Coma:

### NEURITIS.

A patient, aged 56, occupation, driver, employed in an hotel, stated that he had been suffering for thirteen weeks from an acute pain over the left scapula. In answer to questions, he said that he had a severe attack of influenza seventeen years ago, having kept his bed four weeks, and remained indoors an additional two weeks. He has never had his Symptoms.

former good health since this attack. The conjunctiva covering the white portions of both eyes has been deeply injected ever since, and at this present moment are almost crimson, giving him an extraordinary appearance. The sight has always been somewhat affected, and at times much bleared.

Pain.

The said pain in the scapula during the last two or three weeks has extended over the shoulder and down the left arm as far as the wrist. At times exacerbations occur, depriving him of sleep and appetite. He can stoop and touch his feet with his hand, but cannot pull on the boot or sock. The advent of the present neuritis dated from a second attack of influenza, which happened five or six weeks ago.

He has been treated by two medical men for several weeks; the affected part and the arm has been freely anointed by a blistering salve, and applications of turpentine have been kept up until the skin has been destroyed, causing copious expulsion of serum, &c. But in spite of this active treatment he states that there has been no improvement whatever, and that, in fact, the pain has been more severe.

Diagnosis.

The diagnosis formed in the present case was that a part of the toxin which was responsible for the first attack of influenza has remained in the system ever since, and has kept up the purple injection of the conjunctival services, and also handicapped the whole system, and deprived it of its natural healthy tone. This toxin, which, doubtless, is of bacterial origin, has continued to increase in quantity from year to year, and during the last few weeks has invaded the supra-scapular nerve and its branches.

Prognosis.

The prognosis of the case was that relief could

only be attained by the expulsion from the system of the morbidic toxins which were adjudged to be the exciting cause of the ailment. The patient was told that there was almost a certainty that as the pain in the nerve was relieved, so the eyes would be restored to their normal appearance.

Treatment was commenced by an application of Treatment. the Pyonex over the left scapula, which resulted in a discharge of pus over the whole surface, and an inflammatory condition of the skin. This was followed in two days by a marked diminution in the pain; at one time it completely disappeared and the patient thought he was well; but when it returned it was not of the previously severe stabbing nature, the attacks being milder and more easily borne; the bloodshot condition of the conjunctival surfaces being decidedly diminished. The patient remarked that his friends had told him that his eyes were not so red.

A week later a second application was made, which Second application. covered the whole of the back, from the nucha to the lumbar region. This application was followed in two days by a further diminution of the pain.

He has been able to lie upon the left shoulder for half an hour at a time, and he says the pain does not now trouble him anything to speak of. But there is still a stinging which passes down the arm, and is quickly brought on if he does not sit quite straight on the chair. If he sits the least sideways the pain returns, and he is obliged to rise up quickly and move about, and his life in consequence has been a misery. I could only account for the peculiar effect of the quick reproduction of the pain, when he was not sitting

squarely, by the probability that there was a little dragging on the scapula which disturbed the supra-scapular nerve where it passes over its notch. There is also a further diminution in the inflamed condition of the eyes. Four days later a third application was made, on the left arm and fore-arm. He reported that there was still less pain and that he was now able to pull on his boot, and to give it a strong pull after it was on without producing pain. The eyes are still less injected and the vision is clearer. He states that he feels better on the whole than he has felt for several years, and that he is going to work again on Monday, which is only three days hence.

### PARALYSIS.

Many  
varieties.

To enter into a consideration of the various kinds of paralysis that are described in medical works, with a view to point out what advantage may be derived from the use of the Pyonex in each case, would be quite unnecessary for our purpose. We have to deal with the fact that the great majority of the more serious cases of paralysis are caused by the defective function of the spinal cord.

Cause.  
Defective  
function  
of the  
spinal cord.

Inflamma-  
tion.

Whenever there exists inflammation in any part of the cord, or in its enveloping membranes, there may be partial or complete paralysis of the lower extremities and other parts.

Traumatic.

A slight blow on any part of the spine, though at the time it may be considered to be of no importance, may after weeks or months gradually cause congestion and degeneration at some point of the spinal cord, which may lead to paralysis of the lower extremities,



and other parts, whose nervous supply is below the seat of the lesion.

The exact symptoms of spinal paralysis are re- Symptoms.  
ferable to the part of the cord or the pair of nerves that may be affected.

Hemiplegia, which involves the paralysis of one Hemi-  
side of the body, may be caused by thrombosis, or plegia.  
embolism, in which case but little can be done to help it. But it may also be due to sudden and severe Emotion.  
emotion, or to hysteria, in which cases considerable Hysteria.  
help may be gained by treatment. It more commonly happens to persons who are of a somewhat advanced age, and it is often impossible to say for certain what may be the exact cause. The patient may slowly recover from a first attack, but before the recovery is complete a second and more severe one may supervene, which may either prove fatal or be followed by a third and fatal attack. Second or third attack, fatal.

There is one rare variety of this affection which Acute  
has been described under the heading of Ascending Paralysis.  
Ascending Paralysis, in which the paralysis begins at the toes and rapidly ascends to the upper extremities. Death takes place in ten or twelve days, it may be before the upper extremities are invaded. In addition to being paralysed, the lower limbs become white, cold and atrophied, and from lack of nutrition, gangrene may soon set in. In this variety the application of the Pyonex is of no avail. It serves to delay to some extent the rapid progress of the affection, but this is all. Pyonex Treatment of no avail.

The most effectual agent generally employed in the Electricity.  
treatment of paralysis, is electricity. In attacks which are of a mild nature, the relief that may be obtained

by its application to the affected part, and in general to the system, is marked. The medicinal remedies

Medicines. Nux Vomica and Phosphorus are also helpful.

In severe attack.

But when the attack is severe, these measures, after being adopted for weeks or months, may be found to be of insufficient power to effect a perceptible improvement, and they are consequently discontinued. The attack then pursues its own course until the termination of life.

The Pyonex.

The employment of the Pyonex in cases of paralysis is of great service. In many of the milder attacks its application is followed by relief in a few days. But in severe cases, where no thought of relief is ordinarily entertained, a perceptible benefit usually appears after the lapse of two or three weeks. In these cases the treatment is continued as long as is indicated by the symptoms.

Protracted treatment.

Effects of continued applications.

The applications at the commencement of this treatment may be followed by the expulsion of large quantities of pus, which comes from the body and the upper and lower extremities. The arms soon begin to yield less pus, and after six or eight applications not a vestige may appear. The lower extremities, however, need a longer time to give out all their impurity. But notwithstanding the fact that no more matter is expelled, the applications of the Pyonex are persevered with. The immediate effect of the absorption of the oil by the affected part, from this time on, is to cause greater activity in the circulation, and thereby to restore the muscles and nerves to the resumption of their duty.

Circulation increased.

The Spine.

The applications must all the time be continued

to each side of the spine, and especially to the part where the lesion is believed to exist.

Patients will usually tolerate an application every ten or twelve days, but if after several repetitions the skin is painfully sensitive to the perforations of the needles, it is because it has not had sufficient time to recover its full tone. In such cases the patient should take a change of air for three or four weeks, after which time he will be ready to resume the treatment.

Toleration  
of the  
treatment.

#### PARALYSIS.—CASE I.

A patient, Colonel the Hon. —, stated that while employed in Her Majesty's service abroad, he was subject to the exposure of the elements by day and night; he began to suffer in the spine, and to lose the control of the lower extremities. At one time he was compelled, for seven consecutive days, to ride a hundred miles each day. He slept on a wagon the last night, and during a thunderstorm in the night, the wagon was struck by lightning. A part of the electric current apparently came into contact with the legs, and the result was that in a few days he gradually lost the power to move them. Some years have passed, but they have continued to be almost useless, and he can neither stand nor walk. The thighs and legs are always cold, and at night he is consequently unable to sleep. He is habitually constipated, and the sight and brain have less power than formerly. There is pain and weakness in the dorso-lumbar region, denoting some lesion in the spinal cord.

History.

There appeared to be some chance that the

Pyonex Treatment might help, but it was considered to be very doubtful.

Treatment.

Seven applications were made to the region of the spine, principally the lumbar, one to the right leg, and one to the right shoulder, to remove its rheumatism. The following results were noted :

Results.

The natural warmth returned to the legs within a week. He raised the right hand straight up the full length, and said, "That is the first time I have done that for twenty years." The sight became stronger and needed less help in the way of glasses. He said he was able to execute business correspondence with more ease, and had not to drive himself to it as before. There was some increase in the power to move the legs. These served as indications that the improvements might have been maintained with a continuation of treatment.

Notes.

There are points of interest in this case. The earliest improvement was the return of warmth to the thighs and legs. This tends to show that the sensory nerves were more easily restored to their proper function by the removal of pus than the motor nerves, in which the improvement at this moment was barely perceptible.

Sensory  
and  
motor  
nerves.

Pus may  
lodge in a  
part in-  
definitely.

The sudden restoration of full motion to the right arm after a lapse of twenty years, shows that pus may lodge in the joint tissues for any length of time, and that the inherent natural forces are unable to get rid of it. But no sooner is an outlet provided, and a proper stimulus supplied to the weakened parts, than the expulsive power is reasserted, the pus is thrown out, and the joint is restored to its normal condition.

After the expulsion of pus caused by the applica-

tion to the right shoulder, the sight was strengthened, and the functions of the brain were performed with additional freedom. These are common improvements met with in the treatment of nervous diseases by the Pyonex, especially when the cerebral and spinal medullas are involved. The natural inference to be drawn is, that the soft brain tissue, the cerebellum, the optic and other nerves, are all susceptible of purulent infiltration in common with every other part; and immediately after the withdrawal of a part of the impurity from these sensitive structures, their normal functions are sensibly improved. In the treatment of locomotor ataxia, the most remarkable examples of this kind are met with.

Purulent infiltration of the brain and nerve tissues.

Examples in Locomotor Ataxia.

#### MOTOR PARALYSIS.—CASE 2.

A young Swiss, aged 15, was unable to make use of his legs. The paralysis was partial, not implicating the sensory nerves. He had not walked since he was ten years old. As he was the eldest son and heir to his father's property, he was taken to Berlin and Paris, and in each place the highest medical skill was obtained. After an absence of two years he returned to his home, without having procured the smallest benefit.

History.

A general application of the Pyonex was made on the body and legs. The effect was extremely satisfactory. The power of motion began to return to his legs, and increased daily, so that in nine days he was able to walk. Three weeks later, in order to put his cure to a severe test, he walked a mile in snow which was nearly a foot deep.

Treatment.



## HEMIPLEGIA.—CASE 3.

**Symptoms.** The son of a prominent general in the Mexican Army, aged 27, of a thick-set frame and well formed, was suddenly stricken with paralysis. The right side was affected, the paralysis extending to the tongue, so that he could not speak intelligibly. The right shoulder was depressed, causing deformity. The fingers of the right hand were so tightly closed that a considerable amount of force and time were necessary in order to open them.

The right leg and foot were severely affected, so that the leg had to be thrown round in a semi-circle while he was walking. He never ventured out unless accompanied by a servant, and always used a stout cane. He had been in this condition for several years.

**Treatment.** The Pyonex was first applied to the back and chest, and a copious discharge of pus resulted, the pustules being larger than usual. The arms, legs and body, were treated several times during a period of five months. During the first few weeks the thick pus simply poured out of every part. Later on small sporadic abscesses, about the size of a French bean, were formed on various parts of the legs after each application. After three and a half months, the discharge from the arms became very scanty and soon afterwards ceased; subsequent applications failed to produce the expulsion of a single pustule. But from the body, *i.e.*, the chest, abdomen and back, the discharge continued, though in a diminished quantity. At the end of the five months during which the treatment was continued :—

**Discharge.**

**Legs.**

**Arms.**

**Cessation of discharge.**

(1) The right shoulder came up to the level of the other, thus taking away the deformity. Improvements.

(2) He was able to open the fingers of the right hand, without assistance.

(3) He could raise the left foot from the ground, and support his whole weight on the right one.

(4) When riding on horseback, he could grip the saddle with the right leg as well as with the left, whereas before being treated it was useless, and he was unable to keep the foot in the stirrup.

(5) His command over the motions of the tongue was so far increased that much of what he said could be understood.

In consequence of his leaving the city at this time, the treatment was discontinued, and he was lost sight of. But there was good reason for believing that he would have been completely cured had the treatment been continued, although the case was an extremely stubborn one.

#### PARALYSED FINGERS.--CASE 4.

A lady who had a diploma as doctor, whose husband was also a doctor, was visiting a friend in New York City who was also a doctor. She was unable to use the fingers of the right hand. The affection closely resembled that of writer's cramp. No treatment availed to help in the smallest degree.

Symptoms.

Treatment.

The Pyonex was applied to the arm, and the result was the discharge of a quantity of pus. Power of motion begun to be restored on the fourth day after the application, and within a week the fingers were so far restored as to permit of sewing and knitting.

**SCIATICA.**

Pain. When this rheumatic affection of the hip joint assumes a chronic and severe form, it is a most stubborn disease, the pain which is felt along the course of the sciatic nerve being so intense and of such a lancinating character that the patient is unable to walk or stand. He is compelled to remain in bed, or at perfect rest. Exposure to cold, as in other Treatment. rheumatic affections, has the credit for serving as the common exciting cause.

The most active counter-irritation that can be produced, by means of liniments, mustard poultices and blisters, as well as hot applications and warm baths, at times are ineffectual, and the case lingers on with a barely perceptible improvement.

Due to  
effusion

In cases where the pain is caused by pressure on the nerve, which is due to effusion of serum into its sheath, the fluid escapes if the wall of the sheath is pierced with a suitable needle, and the escape of the fluid is followed by immediate relief. This operation may have to be repeated several times.

Counter-  
irritation.

Where the pain is of a purely rheumatic diathesis, it may at times be immediately relieved by the counter-irritation which is produced by an application of the Pyonex. But some cases require to be treated several times before they yield, the progress being decided though slow. Cases of effusion into the sheath quickly yield to the Pyonex Treatment, and sometimes after only one application. The whole surface over the hip joint, combined when necessary with the back and thigh, are treated. The perforations are placed close to each other, and the oil is warmed and well brushed in.

Applica-  
tion.

## CASES.

A farmer, aged 48, for five years had suffered from continued attacks of sciatica. The attacks were severe and continuous. He could not suffer the right leg to be extended. The flexor tendons were so contracted that the foot could not be placed on the ground. He was barely able to limp about with the aid of a walking-stick. The leading physicians in his neighbourhood had done their best to restore him to health, but the case was very stubborn and resisted medical treatment. He looked on his case as a hopeless one.

History and symptoms.

The Pyonex was applied to the whole of the thigh and leg. On the following day the whole of the limb was considerably swollen. On the third day a quantity of thick pus was thrown out. On the fourth day the swelling subsided, and the limb could be extended more than previously. The pain disappeared on the day the treatment was applied.

First treatment.

On the expiration of fifteen days a second application was made, resulting in a more marked improvement. The power of extension had increased so that the foot could be placed on the ground. A third application, made about a fortnight afterwards, sufficed to complete the cure. He could now walk as well as at any period of his life.

Second.

Third.

The engine driver of a large paper factory applied for treatment. For six months he had been suffering from sciatica. He was very lame, and walked with much pain, using a walking-stick. The usual local remedies had been applied, but he was growing worse and about to give up work.

History.

A vigorous application of the Pyonex was made

Treatment.

over the back of the affected joint and thigh. Before the conclusion of the operation all the pain had vanished. He stood up and walked without lameness, and without the aid of his walking-stick.

Persons waiting in the hall were surprised to see one who came in so lame only half an hour before, now walk out naturally.

Resolution. The relief was not temporary. He returned to his duties and never had another symptom of the affection.

Etiology. Such results as this are not frequent, but prompt relief may be obtained when the pain is due to pressure on the nerve by serum which has been effused into its sheath. If the pain be merely of the ordinary character, which attacks the sciatic nerve, its sudden removal by the application of the Pyonex can only

Revulsion. be accounted for by a revulsive action due to counter-irritation. Almost any degree of counter irritation may be produced by varying the method of the application.



## CHAPTER XVI.

### *ASTHMA AND BRONCHITIS.*

#### **ASTHMA.**

- (1) SYMPTOMS.
- (2) ETIOLOGY.
- (3) EFFECTS OF THE PYONEX TREATMENT.  
SEVEN CASES.

#### SYMPTOMS.

There are few ailments which are more distressing to the patient while the paroxysms last, than asthma. It is often hereditary, and the attacks may occur at any time, and apparently without cause. Hereditary.

There is a sudden contraction of the muscular coat of the bronchial tubes, which is of a spasmodic nature. The free passage of air to the lungs is obstructed, and breathing is partially suspended. The attacks are most frequent during the night. There is gasping, difficulty of speech, and a great desire for fresh air. There may be perspiration, and itching under the chin. The pain is severe, and there is cough, with expectoration of frothy mucus. The attacks may occur regularly. Men are more frequently attacked than women. Cause.  
Attack.

There is no affection of a more chronic habit. Year after year the patient suffers, and in severe cases the vital powers are gradually exhausted, until the sufferer becomes a complete wreck. The constant cough, the loss of appetite, and the sleepless nights, Chronic habit.

which are so often spent in a sitting posture, cause him to waste away until he becomes little more than a case of bones or a walking skeleton. The face is pale and anxious, the voice is weak, he is afraid to speak loud, as every effort to use the voice naturally, produces an attack of coughing. An attempt to walk at more than a creeping pace, or go up stairs, is attended by difficulty of breathing and an audible wheezing sound, which is made by the air being forced through the constricted tubes.

Symptoms.

Dyspnœa.

Hay  
Asthma.

Hay asthma or hay fever is a variety commonly produced by the odour of new hay, and comes on during the warm months.

The remedies employed in the treatment of this affection are legion, some of which produce a marked relief during the spasm.

Treatment.

The treatment of asthma by the Pyonex is most encouraging. The discharge of pus from the chest is abundant, the pores made by the instrument frequently forming confluent pustules. In mild cases, after one application there may be marked relief in the breathing and walking powers. But where there is severe emaciation and prostration, the case has to be treated carefully and with patience. A modification of the severer symptoms may confidently be looked for in three or four weeks, and the writer's experience is that the disease always disappears when fairly dealt with.

#### ETIOLOGY.

Exciting  
cause.

The results obtained by the employment of the Pyonex Treatment in cases of asthma, furnish a considerable help towards the discovery of its primary exciting cause. Dr. Berkhart regards it as due to

deficient elasticity in the pulmonary tissue, whilst Dr. Hyde Salter attributes it to an offending condition of the blood.

As to the former opinion, there appears to be every proof of the lung tissue being in a lax state. The lack of elasticity, however, must be due to a primary cause, and we are more interested in ascertaining the nature of this primary cause, than dealing with this want of elasticity, of which it appears to be only a symptom. Lack of elasticity.

As regards the existence of an offending condition of the blood. It is not always an easy matter to discover when or where a toxic element has found its way into the circulation, and from thence has been conveyed to any given point, and that by repeated contributions may at length constitute the exciting cause of such an ailment, as bronchial or any other kind of asthma. Blood impurity.

But when we consider the suddenness and rapidity by which disease germs find their way into the system, by the medium of inhalation, and when we are confronted by a legion of complaints that appear to owe their origin to improper diet or dyspepsia, we are led to favour the hypothesis of the existence of an offending state of the blood. If a paroxysm of asthma under such circumstances be produced by exposure to cold, we have good reason to conclude that the cold would have been comparatively inert had it come into contact with sound tissue. Cold.

Assuming the theory to be correct, that the blood has conveyed to a previously healthy lung a morbid element, and that either by a multiplication of the microbes, bacilli, or cells of said morbid element, or Assumption.

by further contributions from the circulation, the whole, or the greater part, of the body of the lung has been invaded; we are quite willing in such a case to allow that the natural lung tissue may lose its elasticity, and be consequently abnormally predisposed to give way or break up when attacked by cold or the effects of ingesta. This morbid element, however, has not finished its work when the air cells are invaded, but as it continues to multiply in quantity, it invades the bronchial tubes, and renders their muscular coat so sensitive that it is easily thrown into a more or less violent spasm. Cold is the most common cause by which this spasm is produced. But the odour of paint, hay, flowers, and a multitude of other things, may in an instant come into contact with the hyper-sensitive mucous and muscular coats, and produce a paroxysm. The mucus which causes the cough, and is expectorated, is of varying quantity and character, and appears as the result of an effort of the system to get rid of some of the impurity.

By applying the Pyonex to the chest of an asthmatic patient, we gather some aid towards the solution of the proposed theory. A quantity of purulent matter is expelled, and the severer symptoms of the complaint are soon relieved. We also find that the morbid element is not always expelled in an equal quantity from the whole of the lung tissue. If the patient complain of one part of the chest being more sensitive or painful than the other, we invariably find that from that part the discharge is greater.

Inference.

Tubes invaded.

Cold.

Mucus.

Theory.

Unequal distribution of exciting cause.

The first two or three applications usually result in a copious discharge of pus, of a thick and distinctly

yellow or slate colour. But as the treatment is continued the quantity diminishes, the colour becomes lighter, and the consistence thinner. If the applications be further continued, the pustules become smaller and fewer, until at last there is no discharge whatever, and the instrument may be applied repeatedly without producing the smallest effect in the appearance of the skin.

Diminution of discharge.

We are therefore led to the conclusion that :—

Conclusions.  
Exciting cause.

(1) The exciting cause of asthma consists of a purulent element which invades the lung tissue and bronchial tubes.

(2) That this morbid product may be deposited in some part of the body of the lung in greater quantity than in others.

Distribution.

(3) That by providing an exit, accompanied by other suitable means, it is possible to procure the expulsion of this exciting cause from the system.

Expulsion.

(4) It is shown in the following pages that the disease rapidly dwindles in strength, and finally completely disappears when the exciting cause is got rid of.

Sequence.

#### THE EFFECTS OF THE PYONEX TREATMENT.

It is quite interesting to watch the effects of the Pyonex Treatment in the symptoms of this affection.

*Pain.*—The primary object is to relieve the severe pain that patients suffer during an attack. The treatment never fails to accomplish this. In the vast majority of instances the pain disappears at the commencement of the treatment, and it never persists after the expulsive action is well established, which usually takes place after the second or third application.

Pain.



Dyspnœa.

*Dyspnœa.*—The difficulty of breathing which is such a distressing symptom, and the consequent rush for fresh air, caused by the constriction of the bronchial tubes, also soon disappears after two or three copious discharges of purulent matter from the chest. The loud breathing may continue longer, but when this happens it is due to a want of care on the part of the patient, such as sitting in a cold or damp room, or exposure to draught, or getting wet. Wheezing may be said to be rare after the treatment is adequately applied to the back and chest.

Cough.

*Cough.*—The cough diminishes rapidly, as also the expectoration. The mucus which is secreted in the tubes soon loses its adhesive character. It comes up with but small effort, and without exhausting the strength of the patient. The tone begins to improve and the anxious expression disappears. The pallor soon gives way to the natural healthy appearance.

Sleep.

*Sleep.*—The sleep becomes sound and prolonged. As there is no longer any interruption caused by the cough or expectoration, the natural craving for the long lost rest is satisfied, and every function of the system is performed more effectively.

Appetite.

The appetite improves from day to day. In severe cases, where even a moderate meal cannot be taken without producing a paroxysm, the extreme sensitiveness of the bronchi soon subsides, and the food can be enjoyed without fear of bringing on an attack. It also becomes noticeable that such exciting causes as the odours emanating from fresh paint and chemicals, no longer induce constriction of the muscular coat of the tubes.

Moderate exercise can be taken during the treat- Exercise.  
 ment, without producing any ill results. And if the  
 patient be caught in a shower and be compelled to In rain.  
 breathe the air laden with moisture while walking,  
 it does not appear to affect the progress of the cure.  
 The strength of the body, and especially of the Strength.  
 pulmonary tract, increases in a surprising manner, and  
 the tolerance for every kind of exertion is constantly  
 on the increase. Even in the case of patients who  
 have suffered from the affection all their lives, and  
 have never been able to walk fast, the condition of  
 the bronchial tubes so improves, that they are enabled  
 to run without harm. The return of the power to Voice.  
 use the voice, and converse freely, is one of the early  
 improvements that are noticeable, the cough being  
 unaffected by the effort.

*The attacks.*—The most important of the improve- The attacks.  
 ments is the non-liability to the recurrence of the  
 paroxysms. Their immediate subsidence is a cause  
 for much thankfulness. If the treatment is com-  
 menced immediately after an attack, or in the interval  
 between the attacks, or two or three days before  
 an expected paroxysm, so that there is time for  
 the expulsion of a quantity of purulent matter from  
 the chest, the chances are altogether against the  
 probability that another attack will occur. So that  
 we always expect, that from the commencement of  
 the Pyonex applications, the patient will be free from Immunity.  
 the repetition of the paroxysms which produce so  
 much distress. We do not wish to give the impres-  
 sion that this holds good in every case. But the  
 exceptions are so rare that they may be looked on  
 as only proving the rule. These exceptions are cases Exceptions.

where the presence of the asthmatic symptoms are accompanied by complications which it is quite impossible to relieve in a short time, and by which the paroxysms are caused. But even in such cases the attacks become less frequent, of shorter duration and of a decidedly milder character, and the progress is satisfactory.

Pectoral  
muscles.

In long-standing cases of severe asthma, there is a marked tendency to atrophy of the pectoral muscles. These muscles continue to waste, until the ribs are left with scarcely any more covering than the bare integument, and every intercostal muscle lies in a deep furrow. It is interesting to witness the resuscitation of the apparently annihilated muscular tissue. New life is imparted to the reproductive powers, and there is a rapid new growth of muscle cells. The hollow spaces between the ribs are filled up, and the pectorals are soon redeveloped, and cover the whole of the chest. This growth of new muscle on the chest and back is a particularly prominent result, because the Pyonex applications are to a great extent confined to these parts. But the general emaciation which is marked in the whole frame, also soon begins to lessen, as the expulsion of pus is continued.

Resuscita-  
tion.

Cause.

Polypus.

In cases that have been complicated with polypus, long ropes of mucus may be drawn from the nares, to the great relief of the patient.

Œdema.

When there has been chronic œdema of the feet, in severe cases, it is gradually overcome by returning strength, and finally it disappears altogether.

Chronic  
habit.

The chronic habit of the disease is utterly broken up, and the relief is perfect and permanent.

## ASTHMA.—CASE 1.

Subjoined are a few cases which serve to illustrate the action of the Pyonex Treatment.

A patient, aged 19, before she was a year old, Case.  
began to suffer from attacks of bronchitis. She  
averaged about one attack every other week. These  
attacks lasted all through life. She was never able Symptoms  
to venture out of doors during the winter, and only  
in the afternoons during summer. Most of her days  
were spent in bed. Her father was a physician, but  
her complaint resisted all treatment. Her education  
could not be pursued, in consequence of her being so  
constantly confined to bed.

During the last four years, the bronchitis has Asthma  
developed.  
merged into severe asthma and catarrh.

The attacks begin with sneezing, and running at The  
attacks.  
the nose, which is followed by severe dyspnœa.  
During the spring and autumn she is confined to  
bed for a fortnight at a time. She is well formed,  
not wasted, but of a sallow complexion.

The treatment of this case was commenced Treatment,  
first appli-  
cation.  
October 13, 1896, by an application of the Pyonex  
to the chest. She had at this time been confined to  
bed for several days. A copious discharge of pus  
took place over the whole of the surface treated.  
She had felt quite comfortable. Three days later, Second  
application.  
application was made to the back. The pus dis-  
charged was pale, but abundant.

On the 14th day, the chest was treated the Third  
application.  
second time. She reports having had a slight attack  
for two days, which was caused by "making too free."

On the 18th day, another application was made Fourth.

to the back. She keeps well and says she cannot get up a wheeze if she tries.

Fifth. On the 42nd day, *i.e.*, twenty-three days later, the back and chest were again treated. She has had no symptom of asthma.

Sixth. Ten days later, on the 52nd day, another application was made to the back and chest. She keeps well.

Seventh. Fifteen days later, on the 67th day, the back and chest were again treated. The purulent discharge, which was at first copious, has steadily diminished in quantity, and become of paler colour, after each application.

Eighth. Twenty days later, on the 87th day, the back and chest were again treated. She reported taking cold, and remaining in doors three days with a mild attack of asthma.

Ninth. The last application was made eighteen days later, the immediate object being to remove some angina.

Improvements. The patient now reported being able to go out in all kinds of weather; she could walk several miles at a stretch. She could run, which she never did before in her life. Her sallow complexion had given way to a fresh colour. She was in the best of health and spirits.

Permanent. Advices were received five years later, stating that there had been no return of the affection. Duration of treatment, five and a half months.

#### ASTHMA.—CASE 2.

History. A lady, aged 18, afflicted with asthma nearly all her life. Not confined to the house except during an attack. Has difficulty in ascending a hill, and



shortness of breath after making any exertion. Very predisposed to take cold, and complains of cough and tightness on the chest.

Pyonex Treatment was commenced on May 24, 1895, the first application being given to the chest and back. On the third day, the discharge was profuse, every part being covered with yellow pus. There was a second crop of pustules, which came out from four to eight days after the application of the treatment, of large size and sporadic in character. The breathing was sensibly improved, and a hill could now be ascended without difficulty.

A second application was given on July 1, resulting in a copious discharge of pus, though not so abundant as at first. Some five weeks after this the patient informed me she had "done with asthma." Her words turned out to be true, as up to the time of writing, over six years have passed, and she has had no return of the complaint. The two applications sufficed to effect the cure.

#### ASTHMA.—CASE 3.

A lady, aged 61, who had been suffering for eleven years, applied for treatment. She was attacked every night. The paroxysms have, year by year, been increasing in length and severity, until at the present time, they last from three or four, to twenty-four or more hours. She often thought she would die during the attack. While it lasts she is unable to move; she sits in one place night and day, with a large jug of hot water on her lap. Does not complain of pain or tightness of the chest, but she cannot breathe nor go upstairs without difficulty. For four months she has been unable to go to bed,

First application.

Second application.

History.

Paroxysms.

Can sit only.

Wheezing. or even put her feet on the couch. There is loud wheezing during the attacks. She suffers also from acute dyspepsia, her diet consisting only of small chops and rusks. The feet are œdematous, so that boots cannot be worn. A polypus was removed from the left nostril twelve months ago, since when the nostrils have become clogged every day for three or four hours, during which there is marked dyspnœa. A thick, solid, ropy mucus, of several inches in length, is finally discharged, after which the breathing is natural.

First treatment. Treatment was commenced on February 22, 1898, on the chest. On 24th she was able to put her feet on the couch and sleep five hours, the first time for five months. On 25th there was a copious discharge of thick pus, the pores being confluent. The nose is not so clogged, she can stoop better, and the expectoration is looser. Ordered a Semple's atomizer to be used three or four times a day, with solution of Sodæ Bibor., Potass. Bicarb. and Glycerine, and the left nostril to be painted with a 4 per cent. solution of Cocaine.

Second. March 3.—Pyonex to left half of back.

Fourth. March 8.—Pyonex to right half of back.

March 13.—Pyonex to chest. Reports that she has had no more severe attacks.

Fifth. March 21.—Pyonex to left lumbar region. The œdema in the feet has quite disappeared. The Pyonex was applied as follows, always resulting in a copious discharge of pus:—

March 26.—Chest. 6.

April 1.—Right back. 7.

„ 7.—Left „ 8.

April 13.—Right chest.	9.
„ 20.—Left „	10.
„ 22.—Right back.	12.
„ 29.—Right chest.	13.
May 4.—Left „	14.
„ 9.—Right scapula.	15.
„ 17.— „ „	16.
„ 26.—Left chest.	17.
June 3.—Left scapula.	18.
„ 27.—Left chest.	19.
July 18.—Right „	20.
„ 30.—Left „	21.
August 13.—Right chest.	22.
„ 21.—Left „	23.
September 2.—Right chest.	24.
„ 10.—Left „	25.
1899.	
March 14.—Chest.	26.
July 4.—Chest.	27.
August 18.—Chest.	28.

The nostrils and face were massaged daily, with benefit to breathing and prevention of severe clogging by mucus.

The application of March 14, 1899, was given in order to get rid of some occasional wheezings, there having been no attack of asthma for twelve months.

To remove wheezing.

The dyspepsia gradually grew less, so that the patient was able to partake of ordinary diet. It was combated with doses of equal parts of Taka Diastase and Ingluvin, which had to be continued for several months, and taken with each meal. Three years have now elapsed and there has been no return of the asthma. The ropy mucus which was discharged

Dyspepsia relieved.

Resolution.

from the nose ceased after a few months, disappearing gradually, since when the patient has complained of nothing, enjoying good health.

Small applica-  
tions.  
Crusts.

During the months of April and May, when the applications were given with such frequency, the number of perforations made at each application was small. Owing to the very delicate state of the patient, it was found that small and frequent applications were better tolerated. They caused no inconvenience. Dry crusts of solid friable matter were formed over the perforations, which took weeks to come to their full size. The discharge of impurity was thus maintained during the intervals between the applications.

ASTHMA.—CASE 4.

History. A patient, age 24, who had been suffering from asthma for twelve years, applied for treatment. The attacks commenced when he was 12 years old, from no known cause, and have continued ever since. He is tall and very thin, pale and weak, and is obliged to keep himself almost starved, as a good meal produces a paroxysm. He has never been more than a month without an attack. It usually wakes him between 1 and 2 a.m. He begins to gasp and has pain and constriction across the chest, and he has to spend the rest of the night sitting on a chair wrapped in a blanket. The duration of the paroxysm is never less than nine or ten hours, and is often over thirty hours. He expectorates an adhesive mucus sometimes, but usually has not strength to do so. For the last four years he has been laid up the whole of December and January, and during the remainder of the year is mostly confined to the house. He

Symptoms.  
Paroxysm.  
Thirty hours.

averages two or three attacks each month. He is obliged to walk slowly ; any exertion causes dyspnœa. He has served as butler, but has lost every situation owing to the disease.

September 25, 1896.—He has not had an attack for twelve days, but expects one every day. Weight, 9 st. 11 lbs. Height, 5 ft. 11 ins. Pulse 80. The Pyonex was applied to the chest, the whole of which <sup>First treatment</sup> was thickly covered with pustules on the third day.

September 28.—An application was made to the <sup>Second.</sup> back.

October 5.—A second application was made to the chest.

October 12.—A second application was made to <sup>Fourth.</sup> the back. Reports running a quarter of a mile to fetch a doctor for an accident. Cannot remember ever running before in his life.

October 15.—A third application was made to the <sup>Sixth.</sup> chest, and three days later one to the back.

October 22.—A fourth application was made to <sup>Seventh.</sup> the chest, which resulted in a copious discharge. This was a cold and rainy day, and he was constantly walking about in the rain, but felt no symptoms of asthma. Before being treated he could never venture out of doors in such weather. Says he is no longer affected by the smell of fresh paint, which used to produce an attack.

Up to October 24, *i.e.*, after a month's treatment, nothing could have been more satisfactory than the progress of this case. Forty-one days had elapsed <sup>Forty-one. days.</sup> without the manifestation of a single symptom of the complaint. The patient now neglected the treatment, <sup>Relapse.</sup> and undertook work in which he was engaged from



7 a.m. to 11.30 p.m., and was constantly out in the wet. He turned up after eighteen days, saying he had had two attacks, one of which lasted twenty-four hours, the other one not being severe.

Ninth. On November 9 and 12 the chest and back were treated.

Tenth. November 21.—The back and chest were again treated. He came at 9.30 p.m. for this application, to see if an attack could be warded off which he expected to-morrow, Sunday. He returned to his home to-day after being absent a week, and working hard.

Eleventh. November 28.—The chest and back were treated. He reported having had no return of his symptoms since November 21.

Improvements. The patient now felt well enough to re-engage himself as butler, and did not return for further treatment. At the end of only eight weeks' treatment his pallor had disappeared, and he no longer had the appearance of an invalid. The pectoral muscles had so developed as to form a good covering over the previously bare ribs. His strength and powers of endurance were so improved that he could be on duty the whole day. His appetite was good, and a full meal did him no harm.

Pectorals. Mistake. The case illustrates the mistake he made in making too free while the applications were still resulting in a free discharge of purulent matter. It is fair to assume that, had the treatment been uninterrupted and reasonable care been taken by the patient, there would have been no return of the complaint from the commencement of the treatment.

## ASTHMA.—CASE 5.

A young man, aged 27, suffered from asthma. History and Symptoms.  
He had been afflicted for three years, and could scarcely walk. His body was reduced almost to a skeleton. His mien was haggard and anxious. His features sunken and pale. He spoke in a low and subdued voice, his sentences being interrupted by an incessant cough. His breathing was rasping, and effected with difficulty. He was obliged to walk very slowly, and never ventured out without some one to assist him. He partook of but little food, and his sleep was subject to constant interruptions between coughing and sitting up. A good position was open to him, by which he could earn well, but any kind of employment was quite out of the question. He was wasting away under the severity of the affection, and was only one remove from the end. Had not the Pyonex Treatment been now available, not the smallest hope of recovery could have been held out to this patient. He was duly informed of this, but at the same time the opinion was expressed that he would ultimately be relieved.

Treatment was commenced. When he bared his chest, there was quite a difficulty in applying the treatment. There were ribs and skin, but scarcely any muscle. The instrument had to be placed in all sorts of positions, so as to make the artificial pores on the sunken intercostal muscles. The discharge on the third day was as copious as could be expected from such a case. He reported having slept better, coughed less, and feeling a little stronger.

At the expiration of ten days there was a marked improvement in his breathing. He could walk with

more liberty. His appetite had improved, and he could engage in conversation without being interrupted by the cough.

Six applica-  
tions.

Another application was made to the chest and back, and four subsequent applications were made, at intervals of from fifteen to eighteen days. The discharge following each application was copious. The whole duration of the treatment covered a period of a little more than twelve weeks.

Twelve  
weeks.  
Improve-  
ment.

The improvement in his condition continued without interruption, every distressing symptom disappearing. When the last application was made he was full of life, walked briskly, and got up stairs without noticing any difference in his breathing. He ate and slept well, and complained of nothing. His chest, which had consisted of only bones and skin, was now well covered by a good development of the pectoral muscles. He no longer wore the aspect of an invalid; his pallor had disappeared, and he had the colour of health. He stated that he had already taken the position that was at his disposal, and found that he was sufficiently strong to fulfil its duties with ease. He was earning a good income and was a happy man.

Pectorals.

#### ASTHMA.—CASE 6.

History.

A cashier in a bank, aged 39, had suffered from asthma for twenty years. It commenced when he was 19 years of age, and from that time up to the

Symptoms.

present, he did not think he had passed on an average more than one night in six months, without being compelled to leave his bed once or twice, in order to make use of some remedy to relieve the

constriction of the bronchial tubes, and facilitate breathing. For the last two years, he had not passed a single night without getting out of bed twice. If he ventured out of his house on a cold night, he was much distressed with difficulty of breathing and cough on his return. Up every night.

The Pyonex was applied to the back and chest, and was followed by a copious discharge of pus. He reported on the third day after the treatment, that for the first time in two years he was able to pass the whole night without waking; also that going out into the cold at night gave him no inconvenience. He did not return for further treatment. In this respect his action could not be endorsed. Although the relief he experienced in so short a time was extraordinary, considering the long duration of his affection, the thought was not therefore to be entertained that the whole of the morbid matter had been eliminated from the system. Treatment.  
  
One application.

When the Pyonex Treatment is adopted in cases of long standing, the first application serves to eliminate especially, such purulent matter as is lodged in the superficial tissues. The second and subsequent applications usually produce a quantity of virus which comes from the deeper tissues.

#### ASTHMA.—CASE 7.

Asthma.

Lady —, a Peeress, aged 62, has been suffering from asthma for the last four years. The first symptoms which appeared were of a bronchitic nature; after suffering from this during a lengthened period, the matured symptoms of bronchial asthma supervened. She has had attacks which compel her Symptoms.

Cough. to remain in her bedroom for six weeks at a stretch, while during the whole time the cough would awaken her three or four times each night, notwithstanding that the steam from three kettles ceased not to be poured into the apartment. She now has the characteristic cough, which awakens her at night, without much expectoration. She is compelled to walk slowly and ascends a hill with difficulty, owing to dyspnœa. She is obliged to keep the throat well wrapped. Pulse 76.

Treatment. Pyonex Treatment was commenced by an applica-  
First application. tion on the chest. The discharge, as was expected, was comparatively small. Not being a severe case, the purulent infiltration was not of a severe nature, and the patient was advised that in all probability three or four Pyonex applications would suffice to relieve her symptoms. After this application the patient was somewhat surprised at the improvement in her walking powers. She could now walk fairly long distances without experiencing any difficulty of breathing.

Walking powers.  
Second application. Four days later an application was made to the back. The quantity of purulent discharge was much the same as before, but the whole surface of the cuticle was decidedly less inflamed.

#### TREATMENT.

Note on the discharge. One fact was very noticeable in this case, when compared to cases of a severe character. In very chronic and acute cases, the purulent discharge which results from the primary Pyonex applications is always copious, the rings of pustules being confluent, and commonly running together so as to form one



common sac. The colour of the pus is decidedly yellow and inspissated, being far thicker than that which escapes from an ordinary abscess. But in the present case every pustule was small and distinctly separated from its neighbour by the epidermis. The case served as an example of the invariable rule, that the virulence of the disease bears a direct comparison to the quantity and quality of the pus which is expelled.

Six days later another application was made to the chest. The discharge was less, the pustules being smaller than before. The remaining symptoms rapidly disappeared. The cough and dyspnoea ceased, she was able to walk naturally, and climb rocky ascents without inconvenience, and felt well. The general system also continued to improve for several weeks. Such a reduction took place in her waist that all her dresses had to be taken in. Her activity greatly increased, and such a quickness of motion supervened, which, added to the improvement in complexion and expression of features, caused her friends to remark that she looked ten years younger.

Third application.

Resolution

## BRONCHITIS.

1. SYMPTOMS.
2. ETIOLOGY.
3. EFFECTS OF PYONEX TREATMENT.
4. TWO CASES.

In approaching this affection we feel that we are dealing with a most important subject. The mortality caused by bronchitis, with one exception only, is numerically far larger than that of any other disease. According to the returns of the Registrar-General,

Its mortality.

it is responsible for over one hundred and forty thousand deaths per annum in Great Britain and Ireland. Such a fact as this being brought under our notice, we realise that too much care cannot be taken in order to ascertain what grounds there may be for the adoption and putting into practice of certain claims that may be made for the Pyonex Treatment, as a means by which this great mortality may be diminished. We propose :—

Headings.

- (1) To take a glance at some of its main symptoms.
- (2) To consider its anatomical characters and its relation to purulent infiltration.
- (3) To consider what benefits may be expected when it is treated by the Pyonex.
- (4) To cite two cases which were treated by it.

The cases which it has relieved are legion, and those which are cited are simply given as samples.

#### ACUTE BRONCHITIS.

Acute.

Acute bronchitis is attended by distressing symptoms and danger to life, owing to the partial or total closure of the bronchial tubes. Those who have passed middle life are especially liable to sink under it.

It is essentially an affection of the mucus membrane of the tubes, which becomes inflamed and swollen.

Symptoms.

It frequently commences with a severe cold or influenza, which attacks the lining membrane of the nose, and makes its way down until it involves, first the larger, then the smaller bronchial tubes. When only the larger tubes are affected, the air still passes by the swollen membrane in sufficient quantity to

oxidise the blood, and with suitable medicinal treatment, resolution is established.

But when the inflammation extends into the body of the lung and invades the smaller tubes, there is a liability to their becoming blocked by the copious secretion of thick, adhesive mucus. The pyrexia Pyrexia. is now pronounced, the number of respirations may mount up to 50, the pulse to 120, and the temperature to 103° or more. The frequency of the respirations will depend on the amount of swelling of mucous membrane. The numerous râles and whistlings, Râles. which are heard by means of the stethoscope, are caused by the air being forced through the narrowed tubes.

The pain in the median line of the chest is not Pain. severe. There is a sense of tightness or constriction of the tubes, and a violent cough which brings up an Cough. abundance of frothy expectoration. While the cough is dry, it is painful and irritating, but after the tubes are lubricated by the free discharge from the mucous membrane, the spasm and pain are relieved. When Chronic. the affection assumes a chronic form, it is recalcitrant to the ordinary methods of treatment.

When inflammation attacks the dura mater and Pus. the bronchi, there appears to be a marked predisposition to the copious formation of purulent products. In bronchitis the swollen mucous membrane is highly charged with pus. In its soft and tumid state it secretes on its inner wall a viscid mucus, intermixed with epithelial cells, serum and pus corpuscles, which can be distinguished by the microscope. In propor- Sputum. tion to the sputum becoming more and more laden with purulent products, so the symptoms become more

severe, and so prolific may be the formation of pus cells, that the expectoration may have the appearance of consisting of almost pure pus.

Purulent infiltration.

When we take into consideration all these circumstances, it seems impossible to dissociate the cause of the affection from purulent infiltration. If it were possible to eliminate all the pus, and at the same time check its further formation, it would be reasonable to conclude that the tumid mucous membrane would rapidly resume its normal proportions, and that the cough and other symptoms would disappear. We, in fact, have no choice, while we can find no other cause to which the symptoms can be attributed, but to conclude that purulent infiltration is the exciting cause of the affection. We do not overlook the fact that the purulent infiltration was caused by a coryza or some kindred accident, but as the stages of the affection run their course, this is lost sight of, and other more serious circumstances occupy our attention.

Effects of the Pyonex Treatment.

We now pass on to the consideration of the effects that may be produced by the application of the Pyonex in this affection, and to contemplate how far these effects may tend to corroborate the foregoing conclusions.

The chest.

The chest provides a fine expansion of surface for the application of the Pyonex, and in chest complaints there is presented an excellent opportunity for a display of the beneficial effects that accrue from its use. The artificial pores are made in immediate proximity to the affected parts; and their contiguity to the surface favours the ready expulsion of all offending elements.

## EFFECTS OF THE PYONEX TREATMENT.

When an application of the Pyonex is made to the chest during an acute attack of bronchitis, the first result we notice is, that it produces a soothing and comforting effect, which often leads to a sound sleep. We next notice a fall in the number of respirations per minute, which nearly always takes place within the hour. In forty or forty-five minutes, accurately timed by the watch, the breathing becomes easier. Our attention is next called to the state of the cough. If it has been dry and the difficulty of dislodging the discharge has been marked ; in a few hours the mucous membrane becomes moist, and the expectoration is expelled with little effort. The strength of the patient is thereby preserved. If, however, the cough is already loose, and moist phlegm is being brought up, we notice that it is less frequent, and that the quantity of mucus is decidedly less. There is also a rapid fall in the frequency of the pulse, and of some degrees in the high temperature.

If pain is present, it nearly always disappears after the first application ; if any remains it is but trifling. The patient will also pass a better night, the naps being sounder and longer.

On the morning following the application, our attention is drawn to the fact that there has been a manifest check in the formation of the purulent expectoration. The first diminution in the number of respirations, appears to be due to the relief of the constriction, the spasmodic condition of the tubes being removed. Later on, further improvement is due to the reduction of the inflammation of the tumid mucous membrane.

Effects of treatment.

Cough.

Pulse.

Pain.

Check.

Respirations.



Causes  
of the  
improve-  
ments.

Such improving symptoms as cited, continue to be realised, while the applications to the chest and back are maturing; and they all appear to be dependent on the special circumstances of the check in the formation of the pus-laden sputum.

Counter-  
irritation.

It remains for us to reflect for a moment on the causes of the improvements. To the counter irritation produced by the exposure of the nervous peripheræ to the stimulating oil, we must attribute the cessation of the pain and constriction. A second important

Depletion.

consideration is that within a few minutes from the application of the Pyonex, a decided warmth or glow is created over the whole of the chest. A large proportion of the blood which is feeding the inflamed mucous membrane, being thus diverted to the pectorals and their integument, there is a proportionate diminution of the inflammation of the mucous membrane, whereby the swelling is lessened, and the passage of the air facilitated. But although the counter-irritation and depletion prove to be sufficiently efficacious to effect such improved conditions in a comparatively short time, they could not be permanently maintained, were they the only helping factors. On making an examination of the chest, the second day after the application, we find it covered with pustules on every point where the instrument was applied. In severe cases we discover that these pustules have become confluent and formed sacs of pus, and not only so, but the integument which is between the perforations is also thickly dotted with pustules. This pus has been expelled from the affected mucous membrane, and by its expulsion a marked improvement takes place in its condition. As by its presence the swell-

Expulsion  
of pus.

ing, inflammation, expectoration and cough were produced, so by its withdrawal the exciting cause is removed; these symptoms wane, and then completely disappear. The colour and consistency of the pus vary with the mildness or severity of the case. In a mild case it is a light yellow and fairly fluid; but in a severe case the shade of yellow is more pronounced, and it is of a thick or semi-solid consistence.

Characters  
of pus.

It is surprising to see how soon a favourable turn takes place, even when a case is judged to be in a hopeless condition, after a proper application has been made. Forty or forty-five minutes are necessary for the effects of the application to reach the morbid parts, and from this moment the improving symptoms may be detected.

Rapid im-  
provement  
in grave  
cases.

If in addition to the application on the chest, the back be also treated, the beneficial effects are increased. But this is not necessary unless the condition be grave. If the case be taken in hand fairly early, no apprehension need be entertained that grave symptoms will supervene.

Additional  
application.

The legitimate objects to be kept in view, in the treatment of bronchitis, are to reduce the inflammation and swelling of the mucous membrane, to remove the pus which infiltrates it, to check the further formation of mucus and pus, to relieve the cough, to preserve the strength and to reduce the number of respirations, as well as the high pulse and temperature. All these objects are accomplished by the proper use of the Pyonex, it being understood that every medicine that will contribute to the relief of the patient is faithfully administered.

Objects of  
treatment  
accom-  
plished.

## CHRONIC BRONCHITIS.—TREATMENT.

Treatment. It is not necessary to refer in detail to the treatment of acute bronchitis, further than what has been said, in dealing with the effects of the treatment. But before concluding we must make an allusion to the chronic form.

Chronic cases. In the treatment of old-standing cases, as we have no urgent symptoms to contend with, our attention is particularly engaged in clearing out the purulent products, which infiltrate the chest and lungs. We give such remedies as, in our judgment, the exigencies of the case demand. We are pleased to discover

First application. that the result of our first Pyonex application on the chest is an expulsion of pus, the pustules being well formed and of good size. This is followed by a diminution in the cough, and better rest at night. After three or four days, the patient is conscious of

Second application. being somewhat toned up, and feeling brighter. An application on the back is followed by another expulsion of pus, and by further improvements in every symptom. As the applications are alternated on the chest and back at every few days, we notice that the purulent discharge is diminishing in quantity.

Diminishing discharge. When the discharge is decidedly small, the improved condition of the patient is such that he always considers himself well enough to do without further treatment. It is of the rarest occurrence for a patient to go on being treated until all the pus is cleared out.

Treatment. It cannot be said that it is a matter of much importance for the last vestiges of pus to be removed, as after a few applications have been made, the discharge, besides being of a small quantity, is thin

and of a very light shade, so that its presence cannot do much harm. It has not been known to induce any return of the affection.

As from week to week we go on with our applications and watch the successive crops of pustules that are thrown out, and at the same time we witness the disappearing symptoms which may have existed for twenty years or more, we are convinced that the evidence of these facts confirms the conclusions before alluded to, of the association of the disease with purulent infiltration, as its exciting cause.

Conclu-  
sions.

We readily admit that the quantity of pus which is thrown out, is ample to effect the infiltration of all the various tissues which are in the vicinity of the affected parts, and that, considering its toxic character, is the cause of all the symptoms of the disease.

The subjoined cases further illustrate the effects of the treatment.

#### CHRONIC BRONCHITIS. CASE I.

A clergyman, aged 29, stated that he was attacked by bronchitis when a fortnight old, and with the exception of only four or five years, he has had attacks every winter during the whole of his life. At times he is confined to the house for one or two days, and at times he is laid up in bed for a fortnight. He is always conscious of the presence of the disease, and is extremely susceptible to cold. Aggravating symptoms are produced by the smallest irregularity. A dry hacking cough, together with wheezing and hoarse breathing, and a sense of constriction of the

History.

Nearly all  
his life.

tubes, accompany each attack. There is but little expectoration, it being almost impossible to dislodge the adhesive phlegm. A year ago, asthmatic symptoms developed, frequently obliging him to remain in doors for days together.

First  
application.

Pyonex Treatment was commenced by an application to the chest. A copious discharge of thick yellow pus resulted, and successive crops of large pustules continued to be expelled for ten days; the pus in some places drying and forming crusts.

Second  
application.

Seven days later the back was treated, only a small eruption of scattered pustules resulting. He reports that his voice is stronger and the wheezing has ceased. He had to clear his voice only once, when he last preached, and a lady asked him what had happened to him.

Third  
application.

On the seventeenth day, a second application was made to the chest. There was a marked diminution in the quantity of pus which was discharged; the pustules being fewer and of smaller size. He reports keeping well and is stronger. He can now walk about in fog or rain without taking harm, whereas formerly he was compelled to go in a carriage. He is also able to ascend the steepest hills without experiencing difficulty of breathing.

Fourth  
application.

On the twenty-fifth day, a second application was made to the back. He now reports that the cough has ceased, and that there is no longer any tightness of the chest. He feels more robust, and his voice is stronger for preaching.

Fifth  
application.

On the thirty-second day, a third application was made to the chest, and produced only a small discharge.



On the thirty-ninth day a fourth application was made to the chest. He took a severe cold in the throat and chest last week, which reproduced some of the old symptoms. Sixth application.

Five weeks later, he called and reported having kept perfectly well since his last visit, notwithstanding being out in all kinds of weather. The ladies in church say they no longer hear him breathe. He says the treatment has made a new man of him. Several years afterwards there had been no return of the affection.

#### CASE 2.

A Catholic priest called, and stated that a woman, who was a member of his church, was at the point of death, suffering from bronchitis. As her case was considered hopeless, she had already received absolution, and no expectation was entertained of her recovery. Her husband and family were hourly expecting to witness her decease. History.

The priest wished to know if the Pyonex Treatment might possibly be of some use at this, the eleventh hour. The answer was that had it been resorted to at a reasonable time, there would have been every probability of saving the woman's life, but still, as it was the only means that held out any chance of giving relief, and it was a case of life or death, it had better be applied at once. Treatment.

This was done at the same hour. The patient began to rally within an hour. In fact, as soon as the blood could be diverted from the inflamed tubes and lung parenchyma. The quick breathing, pain, cough and rapid pulse, disappeared within two hours. Her appetite and strength soon returned, and within a week she was so far recovered that she was once more enabled to occupy herself with her household duties. One application.

## CHAPTER XVI.

### PART 2.

APHONIA.  
COUGH.  
HICCOUGH.  
LARYNGITIS.  
PERTUSSIS.  
PHARYNGITIS.  
PLEURISY.  
PNEUMONIA.  
TONSILITIS.

Cough. Every kind of cough is but a symptom. The causes are manifold. But from the prominence of the symptom, and at times the obscurity of the cause, it may be advisable to make a few remarks under this head.

Hysterical cough. An exceptional cough, is that which is of a nervous or hysterical character; in such a case, it will disappear when the hysteria is relieved.

Cause. But in most cases a cough is caused by some affection of the chest, and results from cold.

Varieties. Coughs may be dry, moist, spasmodic and painful, or hacking. When very frequent, the constant effort drains away the strength of the patient, and there is a partial exhaustion of the whole system.

Moist. A moist cough, which is accompanied by copious expectoration, may exhaust the patient more by what it expels from the system, than by the reflex action of coughing.

Dry A cough is dry, when there is little or no sputum,

or when the character of the sputum is thick and adhesive. The sputum, by adhering to the inner wall, or mucous membrane of the bronchial tubes, produces a constant irritation, which excites the cough. The outward rush of air produced by the cough, however, is not sufficiently powerful to dislodge the sputum, hence repeated efforts are made to expel a minute quantity of clear mucilaginous expectoration.

Spasmodic and painful coughs, usually accompany Spasmodic. affections of asthmatic character. In these cases the tubes become constricted, owing to spasm of their muscular coat, so that the air being forced through these contracted channels by the action of breathing, makes a hissing, whistling or wheezing sound.

When persons have a predisposition to take cold, Pre-disposition. which is accompanied by cough, on very slight exposure, the bronchial tubes are sure to be somewhat infiltrated by pus.

When the cough becomes chronic and prevents Chronic. sleep, a slight exposure to cold will increase it; and during the whole of the winter and early spring, they have to wrap up, and take great care of themselves. The chronic cough is especially liable to trouble Those most liable. those who are somewhat advanced in years, when the system has lost the elasticity of youth, and its power of recuperation is at a low ebb.

The lungs, together with their coverings, which are The lungs, &c. formed by the pleuræ, as also the bronchial tubes, which ramify throughout their substance, are liable to become permanently weakened by the supervention and long continuance of a severe cold. This weak- Chronic weakness. ness too often reaches such a point that the lung tissue actually begins to disintegrate and break up,

and the first stage of pulmonary consumption is thereby established.

Cough medicines.

Those who are subject to chronic cough, naturally have recourse to anodyne and soothing remedies, which tend to diminish the irritation of the tubes, and allay the force of the spasm. These remedies, when well combined, usually give great relief and comfort. But when given in chronic cases their

Palliative.

action may be only palliative, as the exciting cause of the affection is not removed.

Morbific matter.

When the parts become permanently weakened as above stated, it is owing to their being infiltrated by morbid matter, which the vital powers are unable to overcome or dislodge. As long as this is present, its deleterious effect is such as to impair the function of the part invaded by it.

Impaired function.

Treatment.

All chest affections of such a nature, are wonderfully benefitted by the application of the Pyonex. The surface of the chest being so extensive, and in such proximity to the affected parts, tends to facilitate the free absorption of the oil and its conveyance to all the infiltrated tissues.

Copious quantities of pus. Two or three applications.

The application of the Pyonex to the chest usually results in the expulsion of copious quantities of pus. Three or more applications may be necessary, in order to expel all the pus from the deeper parts. But when this is accomplished, we may rest assured that a radical cure is effected. It matters not how long may have been the duration of the cough; when the Pyonex has done its work, the root of the affection will have been destroyed.

Improving symptoms.

The improvement in the symptoms usually begins from the time of the first application. Owing to the

counter-irritation and warmth produced by it, there is a marked diminution in the frequency and strength of the cough, and the phlegm is more easily dislodged and expelled. The nights which were passed with such restlessness, are calm and peaceful, and the patient's strength rapidly increases, until perfect health is restored.

The chest, abdomen and back should be treated in turn. Parts to be treated.

A patient, aged 30, nurse of an infirmary at Bath. History.  
For several weeks has had a hard and loud cough, which continues all the morning with violence, and exhausts her strength. It interrupts her in her duties, and attracts the attention of the patients and other nurses. There is also marked dyspnœa, it costs a great effort to go up hill slowly, and she feels as if she "would drop dead." The medicine prescribed for her makes her sleepy, but has no other effect.

January 2, 1897.—The Pyonex was applied to her chest. The discharge was profuse, all the artificial pores being filled and running together so as to form a common sac. The pus was yellow and thick. She slept well every night after the application. There was but little cough on January 3, and during the two following days it entirely disappeared. The dyspnœa has also disappeared, and she can ascend a steep hill with agility. She has no more lassitude and feels herself again. Treatment.  
Discharge  
confluent.  
  
Dyspnœa.

January 12.—Another application was made to the chest by way of precaution, as she was leaving Bath, and the weather was severe. One application sufficed to give perfect relief. This and the case which Second.



follows, are given as samples of the action of the treatment, in kindred cases

**Symptoms.** A gentleman applied for treatment, stating that as the result of a cold, he was suffering from a cough which left him no peace. He was over sixty years of age, tall and naturally an athlete. He had not been able to find relief from the cough, which had clung to him for several weeks. It destroyed the night's rest, and the spasmodic efforts by day had already considerably weakened him. He felt that he was growing weaker, his voice and strength were so failing him that he was unequal to act in his official capacity of chairman and director of various companies with which he was connected. The cough was accompanied by a moist and copious expectoration.

**Treatment.** An application of the Pyonex was made to the whole of the chest, about 9 o'clock p.m. The following morning, the patient reported that he had not coughed once during the whole of the night, but that he had slept soundly from the time of retiring, until his usual time for rising. As the days went by, he continued to be free from cough, and the former strength of voice and body soon returned. On the third day after the application the chest was fairly covered by a light yellow purulent discharge, which constituted the exciting cause of the trouble. The bronchitic râles and rough breathing disappeared in four or five days.

**Hiccough.**

### **HICCOUGH.**

This is sometimes a most troublesome affection.

**Spasm of diaphragm.**

It is caused by spasm of the diaphragm. It is of uncommon occurrence, and is usually allayed by

**Treatment.** opiates or other anodynes.

But there are exceptional cases, which will not yield to the remedies at our command. The patient may grow worse from day to day, the hiccough recurring at regular intervals of from four to seven seconds. From lack of rest and rejection of food the strength is exhausted, and at times the struggle ends in death.

Severe cases.

If opiates fail, Fluid Ext. of Ergot in  $\frac{1}{2}$ -drachm doses every three hours will sometimes meet the case.

Treatment. Opiates, &c.

But if the Pyonex be vigorously applied on the chest and abdomen, after giving a firm massage to those parts, the hiccough will in most cases subside in a short time, and not return. The warmth and counter-irritation divert the exciting cause from the diaphragm, and the spasms disappear.

Pyonex.

A lady brought her daughter, aged seventeen, who had for three days been suffering from hiccough. She stated that the family had no peace by day or night, but were not alarmed, as no serious symptom had supervened. The hiccough was violent and occurred about once in six or seven seconds.

History.

Various narcotics and other remedies were tried, with the hope of allaying the spasm of the diaphragm, without, however, producing any effect. The Fluid Extract of Ergot, which has been known to relieve some of the worst cases of this description, was also administered, without there being any perceptible reduction of the spasm. The Pyonex was then freely applied over the whole of the abdomen. The effect was all that could be desired. The hiccough totally ceased in a few minutes and did not return.

Narcotics, &c.

Treatment

This is one of the cases which sets forth the value of counter-irritation, of such a kind as may be produced by the application of the Pyonex. The sudden

Value of counter-irritation.

cessation of the spasm was due solely to the counter-irritation set up over the entire abdominal surface. The discharge thrown out was scarcely perceptible. The diaphragm may have been somewhat congested, and as soon as the excess of blood was diverted to the surface of the abdomen, the spasms ceased.

### LARYNGITIS—APHONIA.

- Aphonia. The suspension of function may last for years,
- Etiology. owing to a partial paralysis, or a similar state may be induced after a severe attack of influenza, which
- Chords. may involve the vocal chords, and produce chronic congestion of their parenchyma. Their mucous coat, muscular tissue, arteries and nerves become so debilitated that their motion is no longer under control. There is total inability on the part of the patient, either to bring them nearer together, or to separate them. Their elasticity is so impaired or destroyed that they refuse to vibrate, and every effort to speak,
- Subacute. results only in a whisper. Subacute attacks may deprive the patient of the power to sing only. But when they are of a more pronounced character, the voice may be totally lost for months or years. Any sudden excitement that causes a rush of blood to the affected parts, may induce a temporary return of the voice. Electricity may partially restore the lost function, but the voice usually remains weak, and may never regain its pristine vigour.
- Treatment. With regard to the effects of the Pyonex Treatment in pharyngitis, laryngitis, and the frequent accompanying complication of aphonia, the same remarks will in a great measure apply in each case.
- The medicinal treatment is varied so as to meet

the exigency of each case, and need not be further alluded to.

In acute attacks of the pharyngeal and laryngeal tracts, the effect of the Pyonex Treatment when applied to the chest and neck is marked by the profuse expulsion of purulent products, and the rapid subsidence of the prominent symptoms. The inflammation quickly disappears, and the high pulse becomes normal. The swelling and pain pass away. Effects.

When there is partial or entire loss of voice owing to the infiltration of the vocal chords, an improvement begins to take place in their morbid condition, as soon as the first withdrawals of pus are effected. If they are congested or thickened, they commence to return to their normal condition, and a rehabilitation of voice takes place. If the loss of function depends on weakness or partial paralysis, the rapid flow of arterial blood that is induced by the increase of the calibres of the arteries and veins, together with the removal of the toxic elements, set up such an active alterative effect, that the atrophic conditions are soon overcome by the reinstatement of healthy tissues. The chords do not simply get into an improved condition, but they are restored to a perfect state of health. Loss of voice.

In order to produce a rapid diminution of the high fever, the back and chest are treated in turn, allowing an interval of two or three days. The applications are continued upwards around the throat and neck, close to the roots of the hair. It is interesting to carefully note the effects of the application in its different parts. On removing the cotton wool, when the pustules are mature, the perforations covering the lower ribs will be covered by Fever.

decidedly small pustules, which are few in number, and the surrounding integument will show no signs of inflammation. But as the perforations are traced row by row further up towards the neck, so the quantity of purulent matter gradually increases, and the signs of inflammation are more and more marked, until we reach the throat and neck.

The discharge around the throat is by far the most abundant. The pustules are of large size, and filled with a light yellow pus. They are very numerous, not only filling the artificial pores, but plentifully dotting the intervening integument.

An  
example.

This fact furnishes a beautiful example of the way in which the Pyonex Treatment works. The lower ribs being some distance from the affected parts, there is scarcely any impurity in their vicinity to be expelled, but as the seat of lesion is gradually approached, the tissues are more and more charged with morbid products, until we reach the centre of the trouble, where the expulsion is by far the greatest.

#### CASE.

History.

A young lady, aged 19, stated that three years ago she lost her voice for singing, and had never been able to sing since. She had suffered from chronic inflammation of the throat. A thick adhesive phlegm was being constantly excreted, which could only be expelled by coughing. She believed that she coughed every five minutes while not asleep. Her general health was run down, and her spirits flagged; the affection was gaining ground and she was getting weaker. The right side of her face, neck and shoulder were covered with small pustules. These served as an indication that the larynx, pharynx and

Cough.



vocal chords were affected by purulent infiltration. The small discharge was the result of the unaided natural effort to throw out the impurity.

The Pyonex was applied to the neck and chest. Treatment.  
A copious discharge of pus resulted; some of the pustules being of large size. Improving symptoms set in forthwith. The first noticeable effect was the cessation of the cough. All the pustules which previously existed on the face, neck and shoulder disappeared, and returned no more. The system was rapidly toned up, and the spirits no longer flagged. On the eighth day after the application, she reported that the voice for singing had returned, and from this date onwards it steadily improved, and soon regained its natural strength. She ate, drank and slept well. No further treatment was necessary, one application One application. only having accomplished the object in view.

### LARYNGITIS.

A lady, aged 21, professional singer and prima History.  
donna, stated that some months had elapsed since she suffered from a severe catarrh, which involved the whole of the throat and lungs, and especially effected the vocal chords, so that she could make no Vocal chords.  
use of her voice. She had a good colour and an exceedingly healthy appearance, and although she appeared to have entirely got over the effects of the catarrh, she stated that her voice had never recovered its strength, and she was unable to get out the highest notes clearly, notwithstanding her constant practice, and making use of all the means possible to get herself up to par. Her pending engagements were urgent, and it was all-important to be able to bring out the high notes, so as to satisfy her audiences.

- Etiology.** There appeared to be no doubt that the remains of the baneful effects of the catarrh were still lurking in the vocal chords, and probably some of the
- Treatment.** bronchial tubes; so an application of the Pyonex was made on the chest. The discharge which resulted was composed of thin pus and thick serum. All the skin was inflamed and covered with small vesicles and pustules. Within a week the signs of the treatment had disappeared from the skin. The patient expressed much gratitude, and stated that the vocal chords had recovered their tone, and she had no further trouble in doing justice to the highest notes.
- Discharge.** The thin consistence of the discharge in this case was characteristic of what may always be looked for, when the affection which is treated is of a comparatively mild nature.

### **ACUTE LARYNGITIS WITH SEVERE DILATATION OF THE HEART.**

- Laryngitis.** Lady —, aged 58, tall, and of florid countenance and big frame, came from the north of Ireland, travelling twenty-two hours. Seven months ago, called in medical advice for an attack of laryngitis.
- Symptoms.** She obtained no relief, but the symptoms have continued and become more acute, and are now accompanied by severe dilatation of the heart. There is great palpitation on making the least exertion. The heart is so distended that it pushes the left arm away from the side. She has severe dyspnœa and can scarcely walk at all, having to stop every few seconds and gasp for breath. The râles are loudest over the larynx, but they extend over the whole of both lungs.
- Heart.**
- Dyspnœa.**
- Râles.**

There is great flaccidity of the cutis and tissues generally. The breasts hang down, and the abdominal walls bulge out in all directions. Every night when she lays her head on the pillow, she says the wheezings in her chest are like a band of music. The last acute attack was reported to be so severe that it was thought that she would have died. She has a violent and distressing cough; the paroxysm continues until the face becomes purple. The engorgement of the carotid arteries checks the ascent of the blood, and the forcing back of the current causes the dilatation of the left ventricle.

Tissues.

Last  
attack.

Cough.

Cause of  
dilation.

The condition of the patient was critical, and the symptoms were increasing in gravity. The chest symptoms were at once put down as being due to purulent infiltration of the larynx especially, and in a less degree of the bronchial tubes. On the expulsion of this pus an immediate and great improvement was expected.

Exciting  
cause.

Prognosis.

Pyonex Treatment was commenced by making an application to the upper half of the chest. A free discharge of pus took place over the whole of the surface treated. The sudden change in symptoms was surprising to anyone unacquainted with the Pyonex Treatment. On the same day of the application she began to feel better and took a walk. On the following day she felt much better, and walked over a mile up and down hill without weariness, palpitation, or shortness of breath. She marvelled at the improvement, and said that nothing would have induced her to believe that such a restoration was possible, "even if the Bishop of London had sworn to it on the Bible." The terrible cough had ceased, and she could not feel the heart beating.

First  
application.Improve-  
ments.

Cough.

Although the improvement was so satisfactory, all the pus had not yet been expelled, and the laryngeal wheezings and râles had not ceased.

Second application.

After an interval of five days a second application was made. The neck and throat were treated, with the object of further improving the condition of the larynx. A free discharge of pus resulted on the second day, especially over the larynx, where it was thickest and most abundant. The effect of this was that the laryngeal and chest sounds so diminished that the patient said she no longer heard the band of music, and could not realise that it was herself.

Improvement.

Third application.

On the eleventh day an application was made to the left side of the neck, resulting in a further discharge of thick pus.

Fourth application.

Muscular tissue.

On the fifteenth day, the whole of the abdomen was treated, with the object of toning up and contracting the muscular tissues and the extremely flaccid skin. The result was a free discharge of pus at every perforation of the instrument, and the prompt contraction of the whole cutis. There was no bulging perceptible in any part; the contractility of the abdominal muscles returned as soon as the infiltrated pus was got rid of.

Return of cough.

A few days later the cough returned, and the patient stated that she did not feel so well. She had been walking by the sea in a gale of wind, and it was further discovered that during the sharp cold of November she had been sleeping with her bedroom window wide open, the bed being close to the window. On the window being kept closed, the cough disappeared, and the sleep was sound. The chest was again treated, resulting in a discharge of pus in less quantity and not so thick as before.

Fifth application.

Five more applications were made in the same regions as before, in order to effect the expulsion of the remnant of the purulent products, from all the deeper tissues. In each case the discharge was satisfactory. The patient subsequently returned to a place north of London, and through a winter stated to be the most severe for twelve years, made no further complaint of the return of a symptom. A mixture containing Heroin, Hydrochloride, Strychnia, and Ol. Eucalypt., &c., was prescribed, with good effect, on the alluded to return of the cough.

### PERTUSSIS.

This is one of the most troublesome affections which attack children. Its origin is allied to the effects of cold on the bronchial tubes, which predisposes the child to take the complaint from others, it being essentially one of those ailments which is communicable by infection.

Infectious  
bronchial  
affection.

The cough, of which the characteristic sign is that it is followed by a sound which is exactly represented by the word "whoop," is excited by the presence of an adhesive phlegm which adheres to the inner wall of the bronchial tubes. The spasmodic and long-continued cough is an effort of nature to dislodge and expel this phlegm. While the cough is being prolonged for several seconds the patient is unable to breathe. During the momentary cessation of the cough, the air is drawn into the lungs with extraordinary force, and the inrush produces the "whoop."

Its  
character-  
istic sign.

Exciting  
cause.

The whoop,  
how caused.

The duration of the cough usually extends over two or three months, and sometimes much longer. The general health naturally suffers by the disturbed

Duration.



rest, as well as by the constant contractions of the pectoral muscles.

Objects of treatment.

The obvious ends to be gained by treatment are to loosen the phlegm, which is the exciting cause of the cough, and to improve the tone of the bronchial tubes, so that they may cease to excrete it.

Two plans of treatment.

Without referring to the multitude of medicines which are administered in this affection, and which we are compelled to admit are but palliatives, it will suffice for our present purpose to consider two plans by which the above objects may be satisfactorily accomplished.

Cold bath.

(1) The child may be taken from the warm bed after it awakes, and be immersed for ten seconds in a bath of perfectly cold water, it should then be dried

Violent reaction.

quickly and returned to the bed. A violent reaction ensues, by which the phlegm is loosened and expectorated.

Five days.

The repetition of this for four or five days will relieve the cough in almost every case. It never fails to effect an improvement in the symptoms and diminish the force of the spasms. If the attack is unusually stubborn, the operation may be repeated at night. If, in addition to this, another bath be given at midday, the time occupied in the cure is still further curtailed. This plan of treatment is devoid of danger, and always gives good results.

Always effective.

The Pyonex.

(2) The second plan of treatment is effected by the application of the Pyonex. The cough in these cases is prolonged, because of the morbid condition of the bronchial tubes and the adjacent lung tissue, as is shown by its sometimes breaking up and forming the tubercle of pulmonary consumption.

The application should be made over the whole of

the chest and back. Whether the exciting cause be of the nature of a bacillus, microbe, or other morbid element, it is immediately attacked and driven out of the system within three days. The lungs and tubes are rapidly restored to a healthy condition, and the cough, together with its symptoms, disappear in a few days.

Parts to be treated.  
Exciting cause expelled.

### CHRONIC PHARYNGITIS AND LARYNGITIS.

When pharyngitis assumes a chronic form, as happens in the case of ministers and lecturers, developing the condition known as "clergyman's sore throat," the affection may prove to be of a stubborn character, obliging the patient to take repeated and long rests. There is an uncomfortable sensation in the throat, and the constant secretion on the mucous membrane of an adhesive phlegm excites a dry and hacking cough. The voice becomes weak and hoarse, and its use is followed by a sense of fatigue of the vocal chords. When the inflammation extends to the Eustachian tubes, deafness is produced in a greater or lesser degree.

Clergyman's sore throat.

Symptoms.

Cough.

The vocal chords, as well as their adjacent tissues, are deprived of their natural tone and strength, they become debilitated and are unequal to duty.

There is satisfactory evidence to show that this morbid state is caused by purulent infiltration of the affected tissues. During an acute attack, the infiltration is carried to a much greater degree. When the inflammation is principally confined to the larynx, the symptoms are somewhat modified, and our attention is more immediately drawn to the condition of the vocal chords. They become so infiltrated with puru-

Laryngitis.

Vocal Chords.

lent products that their function, either for talking or singing, is totally suspended.

Phthisis.

### PHTHISIS.

Mortality.

When we consider that this affection has the reputation of proving fatal in the case of one person out of every seven of the whole human race, it is not surprising that the question has often been asked, "Is the Pyonex Treatment beneficial to consumptive patients?"

Bacillus  
Tuber-  
culosis.

The fact now satisfactorily established that the micro-organism known by the name of *Bacillus tuberculosis* is the specific and exciting cause of phthisis, helps us, while we study in the first place in what manner, and in place to what extent, the Pyonex may be useful in this complaint.

How  
contracted.

The bacillus finds its way into the lungs by being inhaled with the ordinary atmosphere.

Apex of  
left lung.

Usually the apex of the left lung is first attacked, and from this or some other point the tubercles spread and cause cavities in the body of the lung.

Inflamed  
parts.

There is always a certain amount of inflammation in the lung tissue. The mucous membrane of the bronchial tubes is also inflamed, as well as the pleuræ in which the lungs are enveloped.

Fibrous  
bands.

Fibrous bands, which include arteries, traverse cavities, and when the small aneurisms which form in their walls burst, the hæmoptysis may be fatal.

Vomiting  
blood.

Symptoms.

A cough, accompanied by the expectoration of a glairy mucus, and a dull pain in the affected part,

are usually among the first symptoms. Chills or fever, quick breathing, loss of weight, pallor, fœtor of the breath, a husky voice, suppression of the menstrual fluid in the case of females, exhausting night sweats, colliquative diarrhœa, and diminution of strength, are among the symptoms which follow.

The usual age of those who are attacked is between twenty and thirty; while the duration of the affection may be from a few months to several years.

The strength of the patient is frequently more drawn upon by the inflammatory state of the pleuræ and bronchial tubes, than by the loss of the lung parenchyma. The night sweats also are powerful factors towards the increase of debility. It also commonly happens that there is a considerable degree of bronchitis met with, together with its characteristic sputa.

When such symptoms are present, if we make an application of the Pyonex, the benefits to be looked for are the following: Cessation of the night sweats, disappearance of the inflammatory state of the tubes and pleuræ, diminution of the violence and frequency of the cough, and a daily accession of strength. There is thus a marked improvement in the general condition of the patient.

When the affection is far advanced, the benefit that may be produced by the treatment is not such as to give encouragement.

But in the earlier stages of phthisis, there is a decided improvement from the use of the Pyonex. The cough diminishes, the breathing becomes less rapid, there is considerable increase in strength,

Duration.

Bronchitis  
and  
Pleurisy.

Effects of  
application  
of Pyonex.

Far  
advanced  
cases.

In the  
earlier  
stages.

Improving  
symptoms.

the patient being able to bear more fatigue. Sleep is sounder, and the appetite much improved.

**Treatment.** The application of the Pyonex is always followed by a large discharge of pus, in this affection, and this fact serves as a guarantee for a beneficial result, when a suitable case is treated.

**Open air.** But the open-air treatment is now credited with such excellent effects in dealing with this disease, that it will naturally be preferred to any other. For the reasons already mentioned, the Pyonex Treatment would be likely to prove a valuable adjunct to it. Applications are made to the chest and back alternately, about once in ten days.

## Pleurisy

## PLEURISY.

**Cause.** When the pleuræ, which form the sac which envelops the lungs, as well as the inner lining of the cavity of the thorax, have been subject to severe cold, or get into a morbid condition from some other cause, the result which sometimes follows is that

**Symptoms.** which is known as pleurisy. The pleuræ become inflamed, causing a sharp lancinating pain on drawing in a long breath ; there is a short hacking cough, and expectoration of clear mucus. The pain is caused by the inflamed surfaces coming into contact while the

**Effusion.** patient is breathing. A quantity of serum is effused into the pleural sac, whereby the lung is compressed. The countenance is pallid, the pulse high, and respirations are rapid.

The affection may be acute or chronic. The chronic is the more frequent form, and is often imperceptibly developed, the left side being more



frequently attacked than the right. The duration is usually of several months. The mortality is about 15 per cent. Pleuritic adhesions, which are often permanent, are formed between the pleural surfaces, and are due to adhesive fibrous bands and the thickening of the pleural membrane.

The beneficial effects realised from the application of the Pyonex in this affection, are much the same as those which follow its use in cases of bronchitis and pneumonia. The morbid element, which is the exciting cause of the affection, is being quickly diverted from its seat and expelled from the system in the form of pus.

Duration.  
Mortality.

Beneficial  
effects of  
the  
Pyonex.

When applied in acute attacks, after effusion has taken place, its effect is marked. The absorption of the fluid is promoted, a part of which is at times thrust out through the perforations made by the instrument. The pain is soon relieved, the rapid breathing and high pulse disappear. In a few days the patient is restored to health.

Acute  
attacks.

In treating chronic cases, resolution must not be looked for so quickly, but a marked improvement in the symptoms follows each application. Three or more applications may be necessary. The quantity of purulent matter, which is discharged after the first and second applications, is almost equal. But after this, it begins to wane. The whole of the chest and back should be treated. Before the treatment has arrived at the stage of expelling only a small quantity of pus, the symptoms of the disease will have disappeared.

Chronic  
form.

Parts to be  
treated.

## ADHESIONS.

History  
and  
diagnosis.

A lady, aged 36, the Hon. Mrs. —, applied for advice. She had been an invalid for several years. Various London physicians considered her trouble to be due to morbid adhesions of the pleuræ. For a long period she had scarcely been able to walk at all, and all the brightness of health and spirits had disappeared. Although there was no organic disease, her condition was one of chronic delicacy and precluded the proper enjoyment of life.

Chest.

On examination, the whole of the chest was found to be abnormally sensitive and almost painful to the touch. The pectoral muscles were much wasted, and the subcutaneous tissues were thickened. The thickening was uneven, and on palpation was like layers of fibrous tissue. It was not easy to determine as to the exact condition of the pleuræ or their contiguous tissues, but there appeared to be no doubt that the cause of the symptoms was not in the lung tissue, but that the pleuræ as well as the immediate subcutaneous tissues were involved. From the previous history, there appeared to be good reason for suspecting that the morbid condition of the affected parts was a relic of inflammation, and that these were still in a state of purulent infiltration. If this diagnosis were correct, there would result a free expulsion of pus on the application of the Pyonex, but if not, the application would produce no result. It was decided to put this to an immediate test.

Purulent  
infiltration.

## PLEURITIC ADHESIONS. —TREATMENT.

Treatment.

A Pyonex Treatment was applied to the chest, and on the second day the whole of the chest was

covered with pustules of more than the usual size. Such an expulsion generally ceases on the second day, and the skin quickly resumes its former appearance. But so great was the purulent infiltration of the parts, that crops of new and large pustules continued to be expelled daily for a period of nine days. Expulsion lasting nine days. There was no need of further treatment during this time, as the active expulsion never ceased for a moment. The patient was assured that in all probability her symptoms would disappear. A second application was made to the abdomen, and a third to the back ; both being followed by an average discharge of pus. Resolution.

The condition of the patient improved daily, and within two or three weeks, she was restored to a satisfactory state of health. The walking powers were restored, and for several weeks subsequently she continued to improve in tone and strength.

It was reported that after an interval she again consulted her town doctor with a view to his reporting to her the condition of her chest, and that after careful examination he failed to find the signs of any morbid condition, and asked her what had happened. She then spoke of the chest having been treated by the Pyonex, and the extraordinary flow of pus which followed for nine consecutive days, and the subsequent relief from the symptoms. The consultation concluded by his recommending her, in case of any further trouble, to go and get more of the same treatment. Recommendation.

### PNEUMONIA.

Pneumonia.

This is one of the most dreaded complaints that prevail during the colder months of the year. Men Attacks men more than women.

are more often attacked by it than women, in consequence of their employment involving more labour out of doors. It may attack persons of any age.

Those of advanced years.

When severe attacks happen, especially to those who are more advanced in years, life may terminate in a day or two. In all cases the greatest care is necessary in its treatment, as relapses are liable to lead to complications that may endanger life.

Its course.

This affection is contracted by exposure to cold and damp. Street sights and processions which take place in winter, or during the changes in spring and autumn, always have their victims.

We will now trace the progress of the affection, which is caused by what at first is purely a severe catarrh.

How it operates.

A person is exposed for hours to the cold. From the commencement of the exposure, he begins to lose animal heat, and the temperature of his whole body is lowered. His chest and back get cold, and he feels chilled through the system. He is at the same time breathing cold air into the lungs. This unusual cold from without and within, reduces the

First stage.

temperature of the parenchyma, or actual lung tissue, until it reaches a point at which the blood, while circulating through the lung, gets partially chilled at some particular spot. The effect of this is to coagulate a part of the serum of the blood, which is forthwith detained in and among the air cells.

Serum exuded.

The lower lobe first attacked.

The part of the lung usually first affected is one of the lower lobes, owing to the fact that it cools first, owing to the ascent of the heat to the upper parts.

The extravasation of this serum, which is mixed with the red corpuscles of the blood, blocks the

free passage of the blood in that part, and produces congestion. This is the first stage of the affection, and lasts about thirty-six hours.

Congestion.

Duration.

As the complaint progresses this bloody serum encroaches on more lung tissue, and gradually becomes solid. The spongy texture of the lung is thereby converted into an impervious mass, resembling liver, hence the term hepatization. So much of the lung proper may be thus invaded that its weight is increased to the extent of 3 or 4 lbs.

Second stage.

Solidification.

At this period the patient may begin to recover, in which case all his unfavourable symptoms amend. If, however, the progress of the disease cannot be checked, the affected parts may break up, and an amount of pus be formed which may become infiltrated through the body of the lung, producing blood poisoning, and death in a few days.

Increase of weight.

Third stage.

Purulent infiltration.

Duration.

The symptoms at first complained of are a severe chill and rigor through the body; accompanied by a sharp pain in the chest, in the neighbourhood of the nipple. Next comes the cough, with its rust-coloured sputum, which under the microscope, shews bacteria and bacilli. Later the sputum becomes purulent, denoting the disorganisation of the lung tissue. The fever runs high, with a pulse from 110 to 120, it will often keep at 120 for several days, which is a sure sign that the mischief is progressing. The respirations are quick, and the temperature in the axilla rises to 104°.

First symptoms.  
Rigor.

Pain.

Cough.

Sputum.

Fever.  
Pulse.

Breathing.

Temperature.

Sometimes there is delirium, constituting typhoid pneumonia. At others, there is a characteristic eruption around the mouth, which is a blood impurity

Typhoid  
Pneumonia.  
Eruption.



driven out by the high fever. These, and even gangrene, may occur, especially in persons of intemperate habits. In rare cases, a clot may be deposited from the vitiated blood, in one of the ventricles of the heart, and produce death in a few hours. The duration of the disease is about twelve days, and death is commonly caused by exhaustion. If both lungs be attacked, constituting what is known as double pneumonia, the chance of recovery is smaller.

Heart  
thrombus.  
Duration.

Double  
Pneumonia.

Treatment.

#### TREATMENT.

It is not our province to enter into the merits of the usual medicinal and other measures which are so useful in the treatment of this important affection, it being understood that every physician does his utmost to benefit his patient by all such methods as his judgment leads him to approve. Experience proves that in the treatment of this and other serious affections, it is important not to neglect the prompt administration of such therapeutic remedies as are at our disposal, and we invariably find that their beneficial action is threefold, while we are withdrawing from the system, by a process of elimination, a toxic element which was thwarting their proper offices.

Medicinal  
remedies.

Increased  
effects.

We now take a glance at the effects of the Pyonex Treatment when resorted to in either of the three stages of pneumonia.

Effects of  
Pyonex  
Treatment  
in first  
stage.

If we are called to treat a patient whose symptoms lead us to conclude that he is in the first stage of pneumonia, it will suffice for our purpose if we give a good Pyonex application to the whole of the chest.

The prompt effects of this will be to reduce the pyrexia, ease the pain, and probably induce a sound sleep. The cough, which may at this stage be dry, will in a few hours become moist, and the expectoration be easily dislodged and expelled. The anxious expression will be replaced by one of apparent comfort. The pulse and temperature will be likely to approach their normal condition on the third day after the application. The purulent discharge resulting from the application will mature on the second day. The pustules will be of moderate size, and the pus fairly fluid.

Pyrexia.  
Pain.  
Cough.

Discharge.

#### EFFECTS OF THE PYONEX TREATMENT.

If we diagnose this first stage to be one of a more than ordinarily severe attack, in addition to the treatment on the chest, we treat also the back. We then find the improving symptoms to resemble, as nearly as possible, those already mentioned. The symptoms, which thus usually disappear in two or three days, do not return; but strength rapidly increases, and within a week the patient is able to get about. The attack is thus nipped in the bud. Owing to the fact that the exciting cause has been expelled, the disease is not able to proceed to its second and third stages. In all cases of this kind, where the lungs are attacked by a catarrh so violent that, as far as we can judge, the consequences may be of a grave character, a Pyonex application to the chest and back, or chest only, is most safe and reliable. During a long experience I have never known it to fail in promptly improving the condition of the lungs, and averting danger.

Treatment  
in first  
stage.

Disease  
arrested.

Safe and  
reliable  
treatment.

Treatment  
of second  
stage.

If the second stage has already supervened when the application of the Pyonex is made, as there is now a certain amount of hepatization, more has to be accomplished in order to effect a satisfactory result. Nevertheless, within a few hours of the application there is a decided mitigation of the severer symptoms.

Earlier  
expulsion  
of pus.

The pus is usually expelled in twenty-four hours instead of forty-eight, the quantity is perceptibly in excess of that which results in the first stage; also the colour is yellower, and the consistence less fluid.

Treatment  
of third  
stage.

In the third stage the formation of pus is proceeding with great rapidity, so that the whole lung may be invaded by purulent infiltration. When this takes place, our ordinary remedies are of little avail, and we may daily look for the end of the struggle for life.

Twelfth  
hour.

But even at this twelfth hour, the proper use of the Pyonex Instrument will quickly avert danger. This stage usually lasts a few days, and gives time to effect an extraordinary change. Toxic pus is hastening on pyæmia, and our only hope is based on being able to withdraw this from the lung, more rapidly than it is generated. Fortunately we have no difficulty in accomplishing this.

Basis of  
hope.

When tissues are so surcharged with a purulent element as in this case, it is surprising to witness how quickly the system will avail itself of an outlet. On making a vigorous Pyonex application to the whole of the chest, the pustules form in a few hours. It looks as if every natural power were aware of the danger, and engaged in one supreme and combined effort to thrust out the enemy. As the pus pours out, so every symptom rapidly improves. The pulse, the

Quick  
expulsion.

Results.

temperature, the respirations, the pyrexia, the pain, the cough and insomnia, lose their strength, the condition of the lung tissue rapidly improves, and resolution is soon established.

It may be necessary to treat the back also, but The back. this must depend on the urgency of the symptoms. The literal meaning of the word Pyonex cannot be better exemplified than when an application is made under these circumstances ; and pneumonia, when thus properly handled, loses its dangerous characteristics.

#### PNEUMONIA—CASES.

Such a vast number of cases of pneumonia have been treated with good results, that it would be a weariness to relate them. The affection is of such common occurrence, and the similarity of the attacks so great, that the task of writing or reading them would be a monotony.

If the more severe cases readily yield to the Pyonex Treatment, it will be conceded that the milder cases will not be likely to give much trouble. We therefore limit ourselves to the relation of three cases only of severe type.

*Case 1.*—Both lungs implicated, pronounced to be hopeless by four physicians in consultation, and with only twenty-four hours to live. On the tenth day of Pyonex Treatment, the patient rode several miles on horseback.

*Case 2.*—Both lungs attacked ; pronounced to be in extreme danger by three physicians in consultation. A few days after treatment the patient resumed his regular duties at his city office.

*Case 3.*—Both lungs attacked, age 72. The case was considered fatal. The patient completely recovered in a few days after the commencement of treatment.

PNEUMONIA.—CASE I.

- History.** A gentleman farmer, aged 64, contracted a severe attack of pneumonia, both lungs being implicated. He got rapidly worse, and on the fifth day after he was taken ill, the symptoms which had developed were so grave that a consultation of four physicians was held.
- Symptoms.** The respirations were 24, the pulse 118 and the temperature 103. Dyspnœa was acute, and the sputum laden with pus and disintegrated lung tissue. After examining the case, they pronounced it to be hopeless, and gave the patient only twenty-four hours to live.
- Treatment.** Immediately after this verdict was given, the Pyonex, as a last hope, was applied vigorously over the whole of the back and chest.
- Results.** The results were most satisfactory. Within an hour the respirations dropped to 19, the pulse to 111, and the temperature to 101. After a few hours the patient actually sat up in bed, and within twenty-four hours was considered to be out of danger.
- Discharge.** Pustules began to form on the back and chest a few hours after the application was made, and there was a copious discharge of pus on the next day, on the whole surface treated. From day to day he made wonderful progress and rapidly regained strength, and on the tenth day after the application of the Pyonex he rode ten miles on horseback, feeling in his usual health.



## PNEUMONIA.—CASE 2.

A gentleman contracted a severe cold while travelling in a railway carriage. On the termination of the journey he felt ill and took to his bed. His doctor after seeing him pronounced his case to be one of pneumonia in both lungs. The symptoms from day to day became severer in a marked degree, and the course of the affection was so rapid that on the fourth day it was decided that three physicians should be called in consultation. They pronounced him to be in extreme danger, but did not state that they considered the case to be quite hopeless.

History.

Three Physicians.

As soon as the consultation was concluded a Pyonex Treatment was made over the chest and back. This was followed in a few hours by a copious expulsion of thick pus from every part. The graver symptoms forthwith began to abate, and within an hour or two he was breathing comfortably and smiling. Within twenty-four hours he was considered to be out of danger. He steadily improved from day to day without a relapse or bad symptom. In nine or ten days he returned to his office and was well enough to resume his regular business.

Treatment.

Recovery in nine days.

The convalescence was so rapid that it was not considered necessary to make a second application.

Tonics and other remedial agents were administered with satisfactory results.

## PNEUMONIA.—CASE 3.

A Swiss gentleman, aged 72, a banker, caught cold while travelling, and on terminating the journey was attacked by pneumonia in both lungs. On

History.

account of his age and the severity of the attack, grave fears were entertained as to his recovery.

**Treatment.** An application of the Pyonex was promptly made over the chest and back, which resulted in the discharge of a quantity of thick pus. A marked diminution was manifest in the cough, breathing and pulse within two hours. He continued to improve, and in a few days completely recovered. His physician told him that but for the Pyonex Treatment he would have died.

**Explanation.** Our attention is called to the fact that the improvement which took place so soon after the application of the Pyonex Treatment could be due only to some decided change in the condition of the lungs, and that this change was brought about by the perforations and the absorption of the stimulating oil.

**Forty minutes.** Such an effect may be noticed in every application which is made in cases of this kind. In forty minutes as nearly as possible the patient often uses the expression that "a load has been lifted from him." The sense of extreme weight and oppression is removed and air can again be drawn into the lungs with some degree of freedom.

**Explanation.** It would appear that the morbid element which on the second day is expelled in the form of pus, makes its start from the infiltrated lungs in about forty minutes, and that at the moment that this start is made for the surface, the lungs, owing to the sudden depletion of pus, as well as the diversion to the surface, of the excess of blood in the congested capillaries, are greatly unloaded, and a feeling of intense relief is experienced by the patient. The fact that a period of forty-eight hours may be required

for the pus to pass through the tissues, and appear under the epidermis does not interfere with the immediate benefits which are realised.

Cases of this type help us to concentrate our Etiology. thoughts into a very small compass, as far as regards the cause of the affection and its often fatal termination; we may, in fact, sum it up in the one word Pus. No pus—no danger. Copious pus—small hope. If Pus. at any moment all the pus could be eliminated, from that moment the dangerous symptoms would subside. It is not claimed that the Pyonex Treatment will withdraw the pus in a moment, but long experience shows, that it will cause its expulsion in time to avert danger and preserve life.

### TONSILLITIS.

Tonsillitis.

Acute attacks of simple inflammation of the tonsils Acute. are attended by a good deal of constitutional disturbance, but in a short time the symptoms may disappear.

But if the inflammation invades the substance of the Suppurative. tonsil so as to lead to suppuration, and especially if both tonsils be implicated, the symptoms become very distressing. As the abscess increases in size Symptoms. the pulse and fever become high, and the temperature rises to 104° or more. Breathing and swallowing are performed with difficulty. If fluctuation be detected, proving the presence of pus in the tonsil, the abscess should be opened at once.

In cases where a patient is attacked two or three Periodical. times a year by suppurative quinsy, it is evident that the body of the tonsil and its adjacent tissues are in

- Bacteria.** a chronic state of impurity. This is due to purulent infiltration, which may have been set up by the presence of micro-organisms, or vegetable cells, which propagate with extraordinary rapidity. During the intervals between the attacks the patient is always conscious of there being a certain delicacy and weakness about the throat; and exposure to cold, if but slight, is followed by threatenings of the complaint.
- Treatment.** If the Pyonex be applied at the onset of an acute attack it is cut short, the morbid element which constitutes the exciting cause is rapidly expelled. The blood is diverted from the inflamed parts by the continuous counterirritation, and the condition of the patient improves.
- Periodical.** In cases where patients are subject to the repetition of the affection, two or three applications of the Pyonex may suffice to reduce the tissues to a healthy tone and prevent the recurrence of the affection.
- Parts to be treated.** The application should include the whole of the neck and throat; the perforation should be in close proximity. The back and chest should also be treated.
- Symptoms.** A bank manager, aged 50, for fifteen years suffered from frequent attacks of quinsy. These attacks were so severe as frequently to endanger his life. They recurred two or three times a year, and each attack lasted on an average a fortnight.
- Treatment.** Six applications of the Pyonex were made on the back and chest at intervals of about ten days, covering a period of about nine weeks. A large quantity of purulent matter was thereby expelled from the
- Resolution.** system, and he never had another attack of quinsy.
- Pathology.** This case is rather interesting as showing the

effects of pus cells when they make their habitat in a particular locality, and also of their periodical propagation and accumulation in the part to such an extent as to reproduce at certain periods an affection of which they were the sole cause. During each attack the fever and inflammation ran so high that a certain proportion of the purulent infiltration, which was most superficial, as well as that which filled the abscess, was got rid of. Thus for a time the patient had rest from the attacks. But the multiplication of the pus cells was always going on, and when the infiltration had reached a certain point the soft tissues were again broken down and another abscess was formed. By the application of the Pyonex the purulent matter, which formed a nucleus for the propagation of new cells, was expelled from its hold in the usual discharge. The tissues then resumed a healthy tone and no further attacks occurred.



## CHAPTER XVII.

### *FEVERS.*

DIPHThERIA.

INFLUENZA.

INTERMITTENT FEVER.

MEASLES.

SCARLET FEVER.

SMALL-POX.

TYPHOID FEVER

TYPHUS FEVER.

### **DIPHThERIA.**

- Cause. Diphtheria is an epidemic disease produced by intense blood poisoning. The nature of the poison is believed to be the micrococcus, or round variety of vegetable cells, or bacteria. The poison, after being received in the blood and tissues, passes
- Period of incubation. through a period of incubation, of from three to eight days, according to its virulence, after which it produces its train of dire symptoms.
- Parts attacked. The tonsils, pharynx, and soft palate, are the parts which are attacked with the greatest violence. But the inflammation and its accompanying ravages may extend downwards to the trachea and œsophagus. The stomach and other parts may also be attacked.
- Symptoms. Patches of a greyish-white colour appear on the mucous membrane, which later on acquire a yellowish tinge, accompanied by severe inflammation. A false membrane is formed, which appears first on the tonsils

and soft palate. The mucous membrane, tonsils and uvula are greatly swollen, and usually coated with a muco-purulent secretion.

In severe cases the mucous membrane of the mouth and pharynx slough away and emit a foul odour. The glands of the chin and neck become hard and swollen, owing to absorption of the virus. Ecchymoses set in, in the serous membranes, and degeneration in the heart, kidneys and liver. There is high fever and quick breathing; the breath being fœtid and accompanied by râles during sleep: there is expectoration of patches of the decomposed membrane, and vomiting, delirium and coma.

Severe cases.

Breathing.

The duration of the disease is usually from seven to fourteen days. Extremely violent cases may terminate fatally in two or three days. The cause of death is usually exhaustion.

Duration

In all cases where the symptomatic fever is of insufficient strength or duration to consume and carry out of the system the poisonous elements which produce it, there are certain sequels to the disease of more or less serious nature. Apart from the impairment of the general health and anæmic condition of the system, various parts are liable to become partially paralysed. The muscles of the soft palate and pharynx may become involved, or the upper and lower extremities may be so attacked as to constitute hemiplegia.

Sequels.

Anæmia.

Paralysis.

The object of the treatment is, naturally, to destroy the parasites which are producing the fatal symptoms. Without alluding to the usual modes of medicinal and hygienic treatment, the point of interest

Object of treatment.

for us to consider is what help we may derive from the employment of the Pyonex.

Applica-  
tion.

The exciting cause being essentially a blood poison, we give a treatment to the chest, abdomen and neck, as soon as we have the smallest evidence of the approach of the disease. In the vast majority of cases there is, fortunately, ample time for the application to be made, and the poisonous element to be expelled before the disease terminates fatally. If the application be made early, the strength of the affection is broken, and no serious symptoms ensue. If the application be delayed until the life of the patient is in extreme danger, the symptoms may be held in check a little while only, and death may follow.

Effects of  
early and  
late  
treatment.

Sequels.

The sequels which give so much trouble, may be avoided by the timely use of the Pyonex.

Influenza.

### INFLUENZA.

This remarkable affection, which has come to the front, especially of late years, bears more resemblance to a severe cold than any other complaint.

An extra-  
ordinary  
epidemic.

It is an epidemic which runs an extraordinary course, by appearing with rapidity in one country after another, and traversing Europe and America, North and South.

Cannot be  
accounted  
for.

There is no satisfactory way of accounting for its sudden appearance at the same season of the year, in localities which are separated by thousands of miles of ocean.

Endemic.

While it has been endemic in several countries at the same time, it has carried off hundreds of victims.

It is remarkable for the severity with which it attacks in some cases, and for the short time in which it produces fatal results.

There is probably no other kindred affection which presents such a wide range of symptoms. It includes headache, pains through the whole system, neuralgia, cough, bronchitic symptoms, diarrhœa, aching in the joints, fever, numbness of the extremities, local congestions, severe prostration, and semi-delirium. Its many symptoms.

The attacks are usually not of long duration, varying from three or four days to a week. Duration.

The medicinal treatment has to be varied according to the symptoms which present themselves. Two or three good doses of Dover's Powders are often more effective than any other remedy, in ordinary cases. Treatment.

But as in other affections which partake of the nature of blood poisoning, the Pyonex, in consequence of its vigorous counterirritant effect, and at the same time its action in rapidly expelling from the system the virus, or morbid matter, or it may be the micro-organisms, which combine to disturb the balance of the vital powers, promptly gives relief. Gives prompt relief.

Another point worthy of note is, that the patients treated by it make a good recovery, and show no predisposition to contract the affection anew. Better recovery.

The whole of the back, chest and abdomen should be treated. Convalescence is soon induced after the expulsion of the virus. The quantity expelled is generally moderate, while from its effects on the system it appears to be of a decidedly toxic character. Parts to be treated.

## INFLUENZA.—CASE.

- History. A patient, aged 39, employment military, stated that seven years ago he had a severe attack of
- Every year. influenza, which laid him up for months, and every succeeding year up to the present time he has had an attack more or less severe. These repeated attacks have played havoc with the system. He was naturally strong, having a body of excellent proportions, and was much given to athletic exercises.
- Weight. His proper weight was over 150 lbs. He has wasted until he only now weighs 120 lbs; all his strength is gone, and he suffers from dyspepsia and general
- Headache. weakness; he has constant headache, and on two occasions has fainted without any apparent cause. He soon gets tired out, and has been compelled to relinquish his profession. He is always constipated and has had to use an enema for years, the passages consisting of hard balls. He is married and has several children, but although in the prime of life the
- Sexual power. sexual powers, which had been weakening for years, completely disappeared between two and three years ago.
- Brain. He has no brain power to think out any subject. He has frequent attacks of eczema, and is also afflicted with chronic catarrh.
- Exciting cause. This patient was a perfect wreck. Tonics, change of air, and all kinds of general hygienic treatment were tried, but they failed to rescue him from the baneful effects of the subtle influenza virus, which had sapped most of the soft tissues, and year by year were bringing its victim to a more pitiable condition.
- Treatment. Treatment was commenced on July 26, 1899,
- Test. by the application of a test treatment on the chest,



the object being to discover if pus existed to any extent in the system. The third day after the application, the resulting discharge of a quantity of thick pus, threw much light on the case, and I was able to hold out encouragement that considerable benefit would be derived from the treatment.

Six applications were made up to September 5, *e.g.*, two on the back, three on the abdomen, and one on the chest: averaging one application each week for six weeks. The pustular discharge, especially from the abdomen, was abundant, and the matter was of a yellow colour and thick consistence. On inspecting these copious discharges, it was not a difficult problem to account for the fact that every important viscus was so handicapped as to be unable to perform its due function.

At the end of the six weeks, the patient reported that he has not had to use the enema for some weeks; the intestines act regularly, and there are no more hard balls. The sexual powers have returned, though there had not been an erection for over two years. There is a decided increase in general strength, and the tone of the system. The muscles are increasing in volume.

An interval of seven weeks passed before the next application was made, on October 25, to the chest and abdomen. He reported having gained 8 lbs. in the last five weeks. He is able to engage in some occupation all the day, and does not get tired out as formerly. The muscular strength has further increased. The dyspepsia is disappearing, and he has not had a headache for a long time. He has more brain power to think out any subject.

Discharge.

Second to sixth.

Discharge from abdomen.

Exciting cause.

Improvement.

Constipation. Sexual powers restored

Muscles.

Weight.

Strength.

Dyspepsia.

- Discharge. On November 22, another application was made to the abdomen. He reports that the seventh application was followed by a copious discharge over the abdomen; and the pus on the chest continued for several days to ooze out, and form crusts or scabs on the skin. His general strength increases, and the sexual powers are still improving.
- Crusts.
- Ninth. The ninth and last application was made to the abdomen on January 15, 1900. The patient was now in good health and had resumed his military career.
- Medicines. Fluid Extract of Palmetto Berries (P. D. and Co.) and Cascara Sagrada cordial were the principal remedies employed. The former, as a tonic and vitaliser, is very effective.
- Remarks. Out of the nine applications made in this case, six were over the abdomen. The reasons for this were that the liver, spleen, stomach, and intestines were so much at fault in their functions. Also in order to restore the sexual powers, the applications were carried as far down to the pubes as possible. Another phase that called attention was, that the discharge over the abdomen was notably greater in quantity than that from other parts. It is found preferable in all cases to treat more frequently where there is a more copious expulsion of purulent matter.

### INTERMITTENT FEVER.

- Three stages. There are three distinct stages in matured attacks of this affection—the cold, hot, and sweating.
- Duration. There is no law by which the duration or frequency of these attacks may be determined. They may come

once or twice a day, or once in one, two, three or four days. But the average duration of the entire paroxysm may be calculated at about seven hours.

The cold stage is the shortest; generally lasting 30 or 40 minutes. During this stage the patient may tremble so as to shake the bed. Cold stage.

Next comes the hot stage, which lasts about four hours, during which the temperature is driven up to 105° or more, accompanied by a flushed face and a full, bounding pulse. Hot stage.

Next comes the sweating stage, which lasts about four hours. The intense heat and other distressing symptoms rapidly disappear, and a good sleep terminates the paroxysm. Sweating stage.

The fever is known as quotidian, tertian or quartan, according to recurrence of the attack every day, or every second or third day. The quotidian is the more frequent variety. Varieties.

These attacks may come on for weeks or months, but may usually be controlled by medicinal treatment. Frequency of attacks.

The general health suffers during the course of the affection, the patient never feeling himself to be up to par. In numerous cases this loss of strength and spirits continues for years, the sufferer always referring to the time when he had the fever as the date after which his good health forsook him. He is subject to pains in the back and limbs, his sleep is not so sound, his appetite not good; his strength and activity are less in a marked degree; he has fits of despondency and listlessness. Effect on general health.

What is the explanation of these symptoms? That he was cured of the fever he has not a doubt, inasmuch as he has not had an attack for months or

years. Why, then, should not his general health return to its former standard?

Explanation. The conclusion we are led to is that after his recovery from the fever, the toxic effect of the malarial poison in his system was so lessened as not to be able any longer to produce the periodical paroxysms. But a certain percentage of the poison still remained in the system in a latent state. And though not of sufficient strength to cause a paroxysm, it produced a depressing effect on every part, and owing to its presence, neither the lungs, liver, heart nor intestines were able to work with their wonted vigour.

Effect of  
latent  
morbid  
matter.

Quinine as  
a specific.

Quinine is the acknowledged great specific against this class of fever, and its excellence as a remedy cannot be exaggerated. But while, on the one hand, by its tonic effect, it enables the vital powers to rise above the deleterious effect of the malarial morbid matter, so that the patient recovers from the fever; on the other hand it does not expel this matter from the system.

What, then, will the Pyonex Treatment effect in this case?

During the  
paroxysms,

If the Pyonex be used whilst the paroxysms are prevalent, the malarial poison is expelled from the system, the attacks cease, the system is purified, and there is little liability to the after depressing effects.

and in  
after years.

If, however, years have elapsed since the date of the attacks, and the general health has continued to be injuriously affected, the Pyonex may still be used with excellent results.

The latent malarial virus is driven out, and the beneficial effects which are thereby produced are at once manifest. The discharge that results, after the

application of the Treatment, may not be so copious as in other febrile affections, but its elimination from the system is marked by the improved function of the liver, stomach and other viscera. The intestines act with more freedom, and there is an accession of strength to the entire system. The occasional headache and constant lassitude wear off. The additional tone to the muscular system is marked by increased strength and endurance. The brain is clearer and the patient expresses himself as no longer burdened by a weight and oppression which rendered his life a misery.

## CASE.

The president of a bank, aged 61, for several years History. had been subject to attacks of intermittent fever, which he had contracted while residing in the Mississippi Valley. The attacks came on at intervals of four months and obliged him to keep his bed from ten to fifteen days. They were characterised by the usual stages of cold, heat and sweating, and always left him reduced in strength.

His general health was poor, he was very thin, and his whole appearance denoted debility.

The Pyonex Treatment was applied on the back Treatment. and chest, resulting in the discharge of purulent matter from the system. His appetite soon improved, and there was a decided increase of tone in the whole system. Strength and activity returned, and the general health became satisfactory. The attacks of ague returned no more.

In such cases as the above the time during which Pathology. a morbid element may have lodged in the system, whether it be a few months or many years, makes



no difference to the beneficial course of the treatment. The same effects are realised in other types of diseases. When an exit is provided and the system or the affected parts are stimulated by the subcutaneous absorption of the oil, the result in every case is the discharge of the offending element or exciting cause, in the form of some kind of virulent matter, which varies in quantity and nature according to the specific disease which is treated.

Ague. Whereas typhus and typhoid fevers are commonly caused by poisonous gases emanating from sewers and allied places, intermittent fevers are usually caused by the impure emanations which arise from decaying vegetable matter. A hot sun pouring down on marshy districts produces this miasm in abundance, and a large proportion of the ailments of the population of such districts is due to what is commonly known as malaria.

### MEASLES.

Rubeola.

Not of dangerous nature.

This complaint does not partake of special interest, as it is not usually of a dangerous character.

Sequels.

There are, however, cases which manifest grave symptoms; and there are, moreover, sequels to this affection which may affect the general health for years after the attack, so that it cannot be treated as a matter of no importance.

Cause.

Contagious. Like scarlatina, small-pox and typhoid, it is produced by a blood poison. It is contagious, so that where due care is not taken it may attack several members of the same family within a short space of time.

First stage.

It comes on with a severe cold or influenza,

accompanied with hoarseness, running at the nose and fever.

After three or four days its characteristic symptom appears on the forehead, and gradually spreads over the body. Small red dots come out which arrange themselves in a crescentic form peculiar to this affection. Its colour is a dull red, and it lasts for about three days, after which small scales fall from the skin, the total duration being about a fortnight. There are various modifications of this disease which it is not our present purpose to go into.

Eruption.

Crescentic form.

Total duration.

We are interested in noticing its sequels and the reason for their existence.

Sequels.

The symptomatic fever in measles does not run so high as in typhoid and scarlatina, the reason being that the exciting cause is not of such a virulent nature.

Pyrexia.

In consequence of there being much less fever, it often happens that all the morbid matter which produced the disease is not consumed or carried out of the system. A part of it remains and predisposes the patient to contract various maladies which are of a graver nature.

Morbid element not consumed.

If at any time before complete recovery the patient be exposed to cold, a relapse may be looked for; not necessarily of the complaint itself, but something of a more serious kind may develop.

Effect of exposure.

This shows that the constant emanation or transudation which was going on through the pores of the skin, and eliminating morbid matter from the system, was suddenly checked, and caused the virus to accumulate at some given point and result in congestion and inflammation.

Explanation.

Sequels. The part thus attacked may be the eye, producing  
 Ophthalmia ophthalmia; or the ear, producing otorrhœa. The  
 Otorrhœa. virus may accumulate in the lung and incite pulmon-  
 Phthisis. ary consumption. The absorbent system may be  
 Scrofula. invaded, and enlarged glands appear in various parts.  
 In many cases where there is no specific affection  
 Cachexia. apparent, the general health is undermined. This may  
 last for many years, even to manhood, the subject  
 never enjoying a due measure of health.

Cause not  
 always  
 apparent. The immediate cause of such a state of the system  
 is not always apparent; and in such cases as admit  
 of no doubt of its existence there is no specific mode  
 of treatment that will alleviate it.

Treatment. If the Pyonex Treatment be adopted at the onset  
 of the affection, the morbid element is driven out of the  
 system and the disease disappears. There is, more-  
 over, no liability to subsequent complications.

But where patients after recovering from the disease  
 have suffered for many years with undermined health  
 and spirits, two or three applications of the Pyonex will  
 bring out of the system quantities of foul pus, and  
 good health will be quickly restored.

Scarlatina.

### SCARLATINA OR SCARLET FEVER.

Why so  
 called.

This fever is so called from the scarlet colour of  
 its eruption.

Mild attacks pass off without trouble, but severe  
 ones frequently prove fatal.

Its cause.

Its primary cause is essentially a blood poison. It  
 is extremely infectious. The virus also may be carried

Contagious

in wearing apparel and may adhere to bits of cloth or  
 flannel or apartments for several months.

Period of  
 Incubation.

Its period of incubation is six days.

It is specially a complaint of children, generally attacking them when three or four years of age.

Age  
attacked.

It comes on with a chill, vomiting and high fever, also bleeding at the nose and pain in swallowing.

The eruption appears on the second day. Dots appear on the skin which coalesce and become distributed in patches; they are of vermilion colour, and are likened to a boiled lobster. The tonsils are swollen, and the tongue has a characteristic strawberry-like appearance.

Eruption.

Tongue

The pulse rises to 130 or 160 or more, with a temperature of  $105^{\circ}$  and upwards.

Pulse.

There is intense thirst and delirium, restlessness and insomnia.

After four, five or more days of such symptoms, desquamation sets in. The cuticle comes off in minute scales, in pieces, or in the form of a glove, occupying some ten or twelve days in the operation.

Desquama-  
tion.

Convulsions, very high pulse, and marked delirium may be taken as symptoms of a malignant nature, which may terminate fatally.

Malignant  
type.

There may be complications of bronchitis or pneumonia, or, if the kidneys be affected, albuminuria and dropsy may terminate life.

Complica-  
tions.

The mucous membrane of the nose or throat may be partially disorganised and break up into a very foetid purulent discharge, constituting *scarlatina anginosa*. Uræmic poisoning and hæmorrhages from various parts may also occur.

Anginosa.

Inflammation of the pleura, pericardium and internal ear may prove troublesome sequels, also articular rheumatism.

Sequels.

The more severe or malignant types of this disease

Fatal types.

quickly prove fatal, the virus producing acute inflammation of almost all the more important organs.

Treatment      The treatment in general consists of such measures as are hygienic, and tend to support the strength which is so severely taxed

Palliative.      Every effort is made to combat the symptoms  
The virus.      which are produced by the deadly virus, which has found its way into the system.

When we consider the extreme readiness by which this affection is communicated to a person in health—and that by the medium of the atmosphere—we are surprised that such an insignificant volume of air should be capable of poisoning the whole system and producing such dire results.

Later researches may discover the subtle agent, which after being admitted to the lungs, makes such havoc with the human system. It is probably a bacillus as in the case of typhoid fever.

Main  
object.      But in any case our main object should be to get this malignant poison out of the system as quickly as possible.

The wet  
pack.      A treatment which effects this to some extent is the "wet pack," the patient being enveloped in a wet sheet, and allowed to remain until free perspiration is induced. If this treatment is persevered in, a considerable portion of the poisonous virus is thereby carried out of the system. The patient is allowed to remain in the wet pack about an hour, and as soon as the perspiration is free, he is dried with towels and replaced in bed. This has a soothing and quieting effect, and the patient will ask for its repetition. Some morbid matter has been eliminated,



and though in small quantity, there is a temporary benefit. Temporary relief.

But just at the time that the eliminative action has begun its work, it is stopped. This is a mistake. Instead of being thus checked, it should be favoured, and allowed to go on without interruption. A fresh pack should be substituted after three or four hours; and the quantity of fluid abstracted from the system counterbalanced by a plentiful administration of refrigerant drinks, containing such stimulants as are adequate to sustain the vital powers. The power of the virus is thus lessened and every symptom improves. Should be continued.  
  
Fresh pack every three hours.

But in the graver forms of this affection it would not be wise to depend alone on the wet pack. The activity of the virus is such, that serious symptoms are manifested, and some more rapid mode of elimination is urgently required.

Here the Pyonex comes to our help.

The counter-irritation produced by it diverts the force of the circulation from the central parts. There is an immediate rush to the surface. The benefit of this is twofold. The congestion of the internal organs is relieved, and the morbid matter is attracted to the surface. It is surprising to witness in what a short time this double effect relieves the distressing symptoms. The Pyonex necessary. Its action.  
  
Congestion relieved.

As we have noticed before, it is not judicious to delay the application of the Pyonex until the appearance of grave symptoms, it should be promptly applied at the inception of the malady. But notwithstanding, in cases where this has not been practicable, there is a marked and continuous improvement within two or three hours of its application. Should be applied early.

**SEPTICÆMIA.**

Cases of septicæmia are met with in patients who, several years previously, were attacked by scarlatina, typhoid, measles, intermittent fever, influenza and kindred affections. When any of these do not run a favourable course, a part of the exciting cause is commonly left behind in the system, and may exert its baneful effect for an untold number of years. A patient once told me that she could distinctly taste the measles in her mouth, by which she had been attacked sixteen years previously. Her health had suffered ever since. The complications of many febrile affections and their after effects are every-day occurrences, and need only a passing reference. But the morbid state in which these patients are often left, is interesting as regards the therapeutic action of the Pyonex.

These patients are in fact good examples of septicæmia. The part of the exciting cause which has been left in the system, after the attack has passed, is responsible for the serious sequelæ and the prevention of the return of a healthy tone to the system. The interest as regards the action of the Pyonex, is in the extraordinary quantity of purulent matter expelled from the system on the application of a treatment. Whatever part of the body is treated, the pus will pour out, and a series of applications are needed to effectually cleanse the system. It does not matter how great the interval has been since the disease was contracted; the tissues provide a harbour for the septic elements for an indefinite period, and the system during this time is so weakened, that the natural expulsive power

is quite unequal to the task of throwing out the toxic products. There are two circumstances which serve to prove the correctness of the hypothesis upon which we started; one is the abnormal quantity of the pus expelled in all such cases, and the other, the fact that as this pus is got rid of, the symptoms which so long were the bane of existence begin to diminish, and during the continuation of the treatment disappear altogether, and good health is re-established.

In conclusion, I may cite another interesting case, which is mentioned elsewhere, in which, after a severe attack of influenza, both eyes became very red and bloodshot, and remained so for seventeen years, the patient stating that he had never recovered his pristine strength, during this long period. On the Pyonex Treatment being adopted the eyes were soon relieved, the redness disappearing, and the normal health was restored.

When the system has been charged with morbid matter for a long time, the unwholesome and septic condition of the tissues which is thereby engendered is somewhat surprising. The Pyonex enables us to arrive at this conclusion.

When, for instance, the instrument is being applied to a person who has been a confirmed invalid for years. She has perhaps not suffered from any special affection which comes under the category of general diseases; but she has been out of health and spirits; there are lurking pains, there is constipation, weakness, insomnolence, languor, weak sight, &c. While the Pyonex is being applied to such a case, a certain amount of impure exhalation.

## IMPURE EXHALATION

is thrown out through the artificial pores as they are being made by the instrument tainting the air in the immediate proximity of the patient to such an extent, that any person standing near her, can perceive it sufficiently to prefer to move away. In such cases the pus, which is expelled by the application of the Pyonex, partakes of the same septic character. It is also sufficiently toxic to account for all the morbid symptoms of the patient. When this morbid virus, which pervades all the tissues and clogs the action of the human machine, is expelled from the system, and a judicious course of remedies is administered, all these ailments which embittered life disappear.

Variola

**SMALL-POX.**

As this disease is now comparatively rare, and when discovered, the victims are at once isolated, the remarks which follow will not go much into detail.

Period of incubation

The cause of this affection is essentially a blood poison. This poison is received into the system about fourteen days before the malady declares itself.

Contagious.

It is propagated from person to person, being highly contagious. The writer knew an instance where in a small town, 500 children who had not been vaccinated were attacked by it, and about 200 died. All this came of one case. The infection was spread through the town by the women who visited this case.

Mortality.

Where persons are attacked that have not been vaccinated, the mortality is about one in three. It has three stages :

Stages.

(1) The invasion, which lasts about three days.

(2) The eruptive, which lasts five days.

(3) The stage of desquamation, which lasts twelve days, making a total duration of three weeks. Duration.

The first stage is ushered in by severe pains in the lumbar region, which is a distinctive symptom. First stage.  
There are chills, nausea, coated tongue, and pain over the abdomen.

The second stage. The eruption appears on the face, lips, neck, wrists, chest, arms and body. Also internally in the mouth, throat, nose and other parts. Second stage.

On the 6th day the eruption is pustular, and the fever, which had diminished, becomes high. During this stage the life of the sufferer is most in danger. If he survives it, the pustules dry up and desquamation begins, the little scabs gradually falling off. Desquamation.

The eruptive stage is called also the suppurative stage, and is characterised by a sickening odour, which is given off from the putrid matter which has been driven out of the system. Odour.

The eruption has four stages. (1) When it first appears it is in small red spots called macules. (2) They become elevated and are papules. (3) They contain serum and blood corpuscles, and are vesicles. (4) They mature and are full of matter, and are pustules. Eruption.  
Macules.  
Papules.  
Vesicles.  
Pustules.

If the pustules are so numerous as to run together, it is called confluent small-pox. The morbid matter being in this case much more abundant, there is increased danger of a fatal issue. Confluent.

There may be several complications, according to what region the eruption especially attacks :— Complications.

The larynx or pharynx may be attacked, producing inflammation of those parts. There may be ery-



sipelas, ophthalmia, bleeding from the nose, or the kidneys.

**Treatment.** The usual treatment is palliative, and does not pretend to check the course of the affection.

The Pyonex is particularly serviceable in this terrible disease. In this, as well as other affections which result from blood poisoning, our attention is not directed to the treatment of the symptoms, which supervene from the unchecked ravages of the exciting cause. But every effort is made to remove this cause from the system.

The physician's aim, to remove the cause.

The Pyonex.

With this end in view, the Pyonex is applied extensively over the chest, and on each side of the spine, as soon as the first symptoms appear. The result of this is, to provide an outlet for the morbid matter, before it has time to accomplish any harm. The pus comes out at once, wherever the Pyonex is applied.

The poison expelled.

On the third day after the application, the system is rid of the scourge. The patient may have to remain in bed; and there may be some fever, malaise, and sundry pains, which somewhat resemble those of the disease by which he was threatened.

Its course checked.

The exciting cause thus being removed from the system, the course and ravages of the complaint are checked and destroyed. The second and third stages, which are the graver ones, never appear, neither does the characteristic small-pox pustule.

No pocks on face. Well in a week.

Not a pustule attacks the face. In a few days, the patient has passed through his convalescence, and is pursuing his ordinary avocations.

**VARICELLA OR CHICKEN-POX.**

Varicella.

Chicken-pox is not attended with danger to life ; the poison which produces it not being of that virulent nature which causes small-pox. It principally attacks children, the eruption does not become yellow and pustular as in small-pox, and is not attended by grave symptoms.

Not dangerous.

Attacks children.

Its course can be cut short by applying the Pyonex at the outset, which will abstract the morbid matter at once, and the child will be well in a few days.

Relieved by the Pyonex.

**TYPHOID FEVER.**

Typhoid.

If we follow the course of the symptoms which are produced by the blood poison in this disease ; we find that there is congestion, and inflammation of the mucous lining of the intestines, which may proceed to ulceration and perforation, in case of which death soon follows. The glands, spleen, liver, and lungs are swollen and congested, and the blood becomes thin and poor.

Symptoms.

Complications may occur in the throat, arteries, veins, kidneys, ears, and almost every other part of the system.

Complications.

The fever may last from three to six weeks ; there are chills, pains in the forehead, and loss of appetite, which is accompanied by purging.

Duration.

The second week comes the delirium, and the patient wants to get up ; if asked how he feels, he generally says he is better. The tongue is thickly coated and discoloured, and a dark matter accumulates on the lips and teeth. The stools may become bloody, while the abdomen is swollen and tender to the touch.

Second week, delirium.

- Spots. On the seventh day, some rose-coloured spots, or papules, appear on the chest and abdomen, which have been preceded by a scarlet rash and serve to diagnose the affection.
- Seventh day. Petechiæ.
- Pulse. The pulse varies from 95 to 120, while the temperature rises to 103°. If it go 3° or 4° higher, death may be expected.
- Period of Incubation. The blood poison remains in the system, on an average, about fourteen days before the fever is asserted.
- Effect of Pyonex Treatment. If the Pyonex be applied to the chest, abdomen, and back, as soon as the patient takes to bed; on the third day after the application, the poisonous element will appear at the surface of the skin. All the symptoms of the affection rapidly disappear and in a few days the patient recovers.

### TYPHUS FEVER.

Typhus.

This fever, although in many points similar to typhoid, has some distinctive characteristics by which it may be recognised.

Distinctive characteristics.

It comes on with more rapidity. The countenance has a characteristic dark hue. It is not accompanied by the purging and bloody stools, while the prostration and delirium are more marked.

Eruption.

The eruption comes out on the third day, and is more abundant. The spots are larger and of a dark red, and continue during the whole course of the fever. If they are abundant, an unfavourable termination may be looked for.

Duration.

The average duration of the fever is fourteen days. Death commonly occurs on the ninth day, but

if the patient survives this day, recovery may be hoped for.

The toxic element which causes the fever is taken into the system twelve days before the patient takes to his bed. Period of incubation.

In the treatment of typhus and typhoid fevers, everything is done that can contribute to the ease and comfort of the patient. The fever runs its course until the poison is burned out. There is no thought of removing from the system this toxin, which is doing all the harm. Treatment, Palliative.

In this consists the great difference between the general, and that of the eliminative plan of treatment.

With the Pyonex at hand, hardly any notice need be taken of the symptoms, hardly an effort need be made to palliate them. Effect of Pyonex.

An extensive application over chest and abdomen, and later on, the back, expels the poison from the body in the form of a pustular eruption. The patient drops off into a profound sleep, and wakes up refreshed. His symptoms rapidly disappear and he is convalescent. Parts to be treated.

## CHAPTER XVIII.

### *MINOR AILMENTS.*

ANASARCA.

CHRONIC ULCERS.

CONTRACTED TENDONS.

DEAFNESS.

ENDOCARDITIS AND EMBOLISM.

NECROSIS.

PYELO-NEPHRITIS.

SPINAL CURVATURE.

THERE are several affections which are not mentioned among the foregoing, in the treatment of which the Pyonex may be of value. These have not a separate description because they are either of less interest or of rarer occurrence.

Hydro-  
phobia.

The writer has not had an opportunity of applying the treatment in a case of hydrophobia, but entertains no doubt of its efficacy in this, as well as in the other kinds of blood poisoning, in which it proves to be a specific.

Ample  
time.

There is usually ample time for the application of the instrument and the expulsion of the virus. The fact that the effects of the virus in this case cannot be controlled by any medical treatment in no way interferes with the action of the Pyonex. Whether the nature of the poison which has been received into the system be such as to destroy life, or only produce symptoms which are of a trivial character, is a question of no real importance.



When the requisite number of artificial pores are made, and kept open by the oil, the system never fails to avail itself of this exit by which to discharge the impurities existing in the blood or tissues.

An exit is  
availed of.

In cases of hydrophobia, as well as all other kinds of virulent blood poisoning, the application of the instrument should be made over as large a surface as possible. The whole of the back, chest and abdomen should be closely covered with perforations. It will not usually be necessary to apply the treatment to the thighs and legs. But this should be done if the dangerous symptoms do not begin to subside in about two hours.

The  
application  
to be  
extensive.

The Pyonex has an extraordinary effect when applied in cases of spermatorrhœa. The benefit commences at once. The counter-irritant and depletory effects are such that the parts which are suffering from over-excitability are partially starved of the blood supply, and before the effects of the treatment pass off they recover their tone and no further inconvenience is suffered.

Sperma-  
torrhœa.

In all cases of inflammation the Pyonex is a safe and effective remedy. The application should be made on an extensive surface, but in no case should include the inflamed part. When used in this manner its action is immediate and thorough. The pain is much diminished in a few minutes, and in many cases entirely relieved. The redness and swelling disappear rapidly, and owing to the fact that the exciting cause is at once drawn away from the affected part and expelled from the system, the improvement in the symptoms is permanent.

Inflamma-  
tion.

Effective  
action of  
Pyonex.

Improve-  
ment  
permanent.

In the treatment of inflammatory and other

diseases of the kidney, liver, spleen, bladder, prostate, stomach and uterus, a general application of the instrument and oil is followed by most satisfactory results.

Chronic  
ulcers.

Chronic ulcers and sores which appear on the legs, and have long resisted treatment, and others which have formed the habit of healing and breaking out again, may be made to heal permanently with a few applications of the Pyonex. As the surrounding tissues are deprived of their morbid elements they assume a healthy tone, and the natural healing power is restored. The applications should be local and general.

Healing  
power  
restored.

Contracted  
tendons.

Tendons that have become contracted by disease, so as not to admit of the extension of the limbs, may be restored to their normal state by repeated applications of the Pyonex. In these cases the instrument should be freely applied over the tendon itself as well as to the surrounding parts. The resulting pustules in the first application are large and numerous. The limb is capable of more extension at the conclusion of each treatment. In some cases a good deal of swelling and cellulitis occur, which may or may not be accompanied by pain. These are caused by the morbid elements which have been dislodged, and are on their way to the surface. They never need cause alarm, as they are transitory, and disappear after the pustules attain maturity.

Extension  
increased.

Swelling  
and  
cellulitis.

Warm  
bathing.

Frequent warm bathing of the part and change of the cotton wool in such cases is very comforting. The warm bathing is advantageous in another way, as it facilitates the expulsion of the matter and the formation of a second crop of pustules.

In all such cases a general application of the instrument to the back, chest and abdomen will increase the beneficial effects and save time in effecting a cure. General application beneficial.

In inflammatory conditions of the uterus, bladder and prostate, general application of the Pyonex is of great service.

### ANASARCA.

Anasarca.

This affection consists of a collection of serous fluid in the tissues, peritoneal sac or other localities. Etiology.  
If it be due to valvular disease of the heart all our efforts to relieve it can be only palliative. We may succeed for a time, but the affection will be reproduced. The same may be said if it be owing to extensive disease of the kidneys.

But there are occasions when there is a considerable amount of dropsy present, and the main cause is the defective function of the kidneys. Defective function of kidneys. The disease persists and increases until the patient succumbs under its morbid influence.

When the affection does not yield to the remedies at our disposal we may often save the life of the patient by the use of the Pyonex. Probably the most effective medicine for this class of affection is Pilocarpin, or decoction of the leaves of Jaborandi. Treatment.  
  
Most effective medicine.  
Not only does a large quantity of fluid pour out of the system by diaphoresis after its administration, but such an impetus is given to every organ in the system that the improved action of the kidneys, in common with other viscera, may suffice to check the further progress of the affection.

But when, in spite of all our efforts, the increase

The  
Pyonex.

of fluid is such as to threaten life, we may turn the scale by giving a vigorous application of the Pyonex over the chest and abdomen. The perforations over the abdomen should be made deeper than usual ; no fear need be entertained in giving the spring a hard pull each time.

The effect  
on the  
kidneys,  
&c.

After the application of the oil the serum begins to exude from every pore made by the instrument, and continues to do so. Also, as the oil is absorbed into the system its tonic effect soon reaches the kidneys. It communicates to them new life, and so great is the stimulus conveyed to them that they again start their work with vigour and activity. With this restoration of function the fluid rapidly passes away through its natural channels, and is drained from the system, and the dropsy disappears.

Second  
application.

The application may be repeated in case of need. Care is taken to keep up the strength of the patient.

Stimulants  
necessary.

Diffusive stimulants, such as whisky or gin, in preference to brandy, may be given if required in doses of a wine-glassful every two or three hours.

#### ANASARCA.—CASE I.

Dropsy.

A patient, aged 25 years, was affected with dropsy, induced by a cold, which he caught while engaged engaged on the public water works.

Three  
months in  
hospital.

He had been in a hospital three months, and had been tapped five times. The affection progressed until the whole frame, from head to foot, was full of fluid. The eyes appeared extremely sunk, from the protrusion of the surrounding parts. The hands

Œdema.

and feet were so œdematous that deep impressions remained on pressure by the finger.

The physicians in charge decided that further tapping was useless, as, at their last examination, the fluid was rapidly rising to the region of the heart. They judged that he could not live more than 24 to 36 hours.

At midnight an application was made with the Treatment.  
 Pyonex. He was treated from the neck to the foot, and about a pint of whisky was given to him. At five o'clock in the morning the kidneys began to act. Function of kidneys restored.  
 Their action was rapid in the extreme, a constant stream being poured into the bladder, which filled a succession of receptacles for several consecutive hours. The fluid in the system was soon drained away, and Ascites.  
 the previously swollen body was reduced to little more than skin and bone. He improved steadily, and never had a bad symptom. In five weeks he left the hospital, without a trace of his complaint. His strength was returning, but the body was still very thin.

#### ANASARCA.—CASE 2.

A shoemaker applied, stating that he had been History.  
 suffering from dropsy, and that it was steadily gaining ground. He was given up, and every hope of recovery had vanished. His face, body and extremities were swollen; the cause being defective action of the kidneys.

The Pyonex was applied to the abdomen, and the Treatment.  
 function of the kidneys was promptly restored. He began to improve, and in ten days all the œdema had disappeared. His friends told him that he had a new lease of life, and the way in which he celebrated his recovery with them, and the excesses he went to, had the effect of reproducing some of his old symptoms.



He came back and made a frank confession. A second application was necessary in order to complete the cure.

Diuretic.

In these two cases of anasarca, in addition to the ordinary effects of revulsion and counter-irritation, produced by the treatment, the renewed function of the kidneys was promoted by the Lytta contained in the oil, which is an active diuretic.

### DEAFNESS.

Cause.

There are many cases of loss of hearing, which have been produced by severe colds. The Eustachian tubes and their immediate tissues become inflamed, and at times there is a muco-purulent discharge from the internal ear which continues for a considerable period. After the cessation of the discharge, the Eustachian tubes may become permanently swollen or congested, so as to shut off the communication with the posterior nares.

Congestion  
of the  
Eustachian  
tubes.

Patients who are thus affected may be perfectly deaf, and often remain so for an indefinite time.

Pyonex.

Parts  
treated.  
Large  
pustules.

If, in such cases, the Pyonex be applied all around the external ear, and at the back of the neck, a large quantity of foul pus is expelled. The pustules are notably larger than usual. The swelling and congestion of the internal parts are thus reduced, and within a few days the patient may be able to hear a little. But in some cases two months, or more, are required for the production of beneficial effects. The improvement continues until he hears fairly. The applications should be repeated until no pus results. The due functions of the tube are thereby restored and the hearing is re-established.

Repeat  
applica-  
tions.

## DEAFNESS.—CASE 1.

A gentleman called and stated that he was so deaf History.  
 that he could not hear a band of twenty-five musical  
 performers when he was only at a distance of fifty feet  
 from them. He attributed his deafness to “a quan-  
 tity of mucus” which he felt in his head. It made “Mucus.”  
 him feel miserable all over, and his brain was con-  
 fused. When he left his hotel in the morning he was  
 unsteady and could not walk properly. He felt a  
 stiffness in his limbs and joints, and was tired out  
 after going a short distance. He enquired of his  
 doctor if there was not some way of getting out that  
 “mucus.” The ears and nostrils were syringed, and  
 he received a course of medical treatment, but he  
 continued to grow worse and thought that he was  
 sickening for typhoid fever.

The Pyonex was then applied to the back, and Treatment.  
 the back of the neck. A quantity of putrid matter  
 was discharged during the four days following the  
 application. Relief came quickly. His hearing re-  
 turned in three days, and all his aches and pains  
 vanished. His brain was clear and his limbs became Resolution.  
 supple. He could eat, drink, sleep and walk as well  
 as ever.

The cerebellum and part of the adjacent brain Cerebellum.  
 tissue appeared, in this case, to be attacked by diffuse  
 purulent infiltration, which gave rise to the symptoms  
 mentioned. The matter expelled was unusually thick,  
 viscid, and of strong odour.

## DEAFNESS.—CASE 2.

A young man, twenty-four years of age, was History.  
 brought who was perfectly deaf. The history of the

- case was not clear, but the deafness appeared to result from what was primarily a cold. There was no means of ascertaining what was the exact condition of the
- Prognosis. internal ear and Eustachian tube. No promise could be made to him of resolution by the application of the Pyonex; but in case the deafness was due to swelling or congestion of the internal ear and its surroundings, there would be a chance of the hearing being restored.
- Treatment. The Pyonex was applied over the back, the neck, and around the ears. A quantity of yellow pus was
- Discharge. discharged. The discharge was most profuse in the neck, and the pustules around the ears were of large size. In a few days the patient conversed with me naturally, without my having to raise my voice; whereas before he had been unable to hear the rattling of the carriages on the street, which was paved with cobble stones. One application sufficed to effect the cure.
- One application.
- Etiology. It is probable that there existed congestion or
- Tubes. chronic inflammation of the Eustachian tubes and their adjacent tissues, which produced closure of the tubes and consequent deafness. As soon as this was relieved by the expulsion of the purulent matter, the tubal communication between the ears and the posterior nares was again established, and the hearing was restored.

### ENDOCARDITIS AND EMBOLISM.

- Embolism. I was called to see a patient, age 44, occupation, Adjutant in the Salvation Army, who was confined to his bed, and stated that five years ago he had a
- History. severe attack of influenza, and in the four succeeding

years the attack had been repeated. Although the attacks did not compel him to remain in bed, he was conscious that from year to year they left the system in a more debilitated condition. About eleven months after the last attack, at 6.30 a.m., while still in bed, alarming symptoms supervened, and after the arrival of a medical man he pronounced it to be a case of embolism. A second opinion was taken, and both of them agreed that a distinct murmur could be heard, which was possibly of valvular origin. Either a fibrinous clot or a small portion of the endocardial lining membrane had probably become detached, and was lodged in a left middle cerebral artery and produced the symptoms. There were severe tremors throughout the frame, twitching of the eyes, and unconsciousness which lasted for about forty-five minutes; after which he complained of pains in the head, neck and heart, also extending down the right thigh. He remained in bed, complaining of weakness and complete inability to get up or do anything. Within a week he was so improved that he was able to dress and move about, and continued for the next following two weeks to regain strength, being able to take outdoor exercise. A second attack occurred exactly three weeks after the first. He remained unconscious for about an hour. This attack was of greater severity and obliged him to keep his bed. The general prostration was more severe, and the recurrence of the pain shooting through the right thigh was sharper. On the twelfth day after the second attack, while still in bed, a third attack took place. Two days before the last attack it was determined to discover what benefits might

Diagnosis.

Symptoms.

First  
attack.Second  
attack.Third  
attack.

result from the employment of the Pyonex Treatment.

Diagnosis. A diagnosis had been formed that the cause of the formation of the clots, and their detachment either from the lining membrane of the left ventricle, or elsewhere, was in all probability due to the morbid condition of the heart, and other immediate tissues, consequent on the accumulation of so much influenza toxin in the system, which was, doubtless, of bacterial origin. And it was considered that if a suitable outlet were provided, this toxin might be expelled, and the heart tissues might regain their normal condition. Accordingly, an application of the Pyonex was made over the præcordial region ten days after the second attack, this being only two days before the third attack. There resulted from this application a very free discharge of large pustules over the whole surface treated, but the pustules which covered the immediate vicinity of the heart were, in a marked degree, of larger size and more numerous than anywhere else. This first discharge was followed, after about twenty-four hours, by a second and very profuse crop of large pustules over the præcordia. The pustules continued to be thrown out for several days in succession, and the character of the pus during the latter days was pestiferous, and of a deep yellow colour. The symptoms which followed the last attack during and after the return to consciousness were: pain and torpor over the occiput, a circular swelling at the superior edge of each temporal bone; the patient had also severely bitten the left side of the tongue. There was a stinging pain passing down the inside of the thighs, and the right leg was completely paralysed.

First application.

Second crop.



These symptoms, however, were of a distinctly modified character. Although the period of coma was of about ninety minutes' duration and the pulse was perceptibly weaker, on its termination the patient stated that he regained tone and strength in much less time than after the first and second attacks, and also that the darting pains through the thighs, and in the heart were of a much milder nature. Ten hours after the third attack the pulse was weak and very compressible, but forty-eight hours later the beats of the heart were wonderfully improved, the pulse being comparatively strong and the general condition of the patient decidedly encouraging.

After an interval of eleven days he had a fourth attack, duration of coma ninety minutes. After the return of consciousness he quickly regained strength. The pulse was decidedly weak for four or five days, after which the heart rapidly resumed its normal tone and strength. Every symptom of pain and discomfort, which had attacked the brain, both sides of the body, and especially the thighs, completely disappeared. Seven days after this fourth attack he was able to get out of bed, and sit in the chair during most of the day. Four days later he had still further improved, and he could walk and move about the room nimbly, or move a chair from one part to another. There was also a marked improvement in the countenance, the face being quite natural in rotundity and colour. The heart's action was strong, but intermitted at every tenth or fifteenth beat. On the fifty-fourth day a second Pyonex Treatment was applied over the whole of the chest. Twelve hours after this application he had another

Encouraging  
symptoms.

Fourth  
attack.

Heart's  
action.

Second  
application.

Fifth  
attack.

attack, this being the fifth. The duration of unconsciousness was about thirty-five minutes. His wife believed that there had been two premonitory attacks shortly before this last one, as it was noticed that during the night the bed shook, and he did not answer when spoken to. The tongue was badly bitten, and both lower extremities were paralysed. He stuttered when trying to speak. Forty-eight hours after this attack he was dressed and sitting in an easy chair, and appeared to be much the same as before. He moved about nimbly and complained of no pain. The heart's action had improved, the pulse being steady at 80, and the intermittent action had disappeared. The purulent discharge which resulted from the second application contrasted greatly with that of the first. The colour of the pus was decidedly light, and tending to white, which, in itself, was a satisfactory proof that the more toxic elements had already been expelled during the copious discharges, which took place after the first application. There was also a marked difference in the quantity of pus expelled. As near as could be calculated, only about a third of the former quantity; and while the subsequent crops of pustules were remarkable for their large size, and deep colour, the crops which followed the second application, were notably smaller.

This case is progressing favourably at time of writing.

### NECROSIS.

#### DISEASED BONE AND CONTRACTED TENDON.

Tendo  
Achillis.

The author had a somewhat unique experience in connection with the tendo Achillis, and metatarsal bone of the great toe.

A jump of about three feet from the bed-plate of an engine on to uneven ground, ricked the tendo Ricked. Achillis of the right leg, and lameness was gradually produced in about eight days. After a few days' rest, it felt almost well, and daily duties were resumed. At the end of another week, the limb became swollen and inflamed, so that all use of it was precluded, and crutches had to be resorted to. The late Sir Prescott Hewett pronounced it to be a case of effusion into Effusion. the sheath of the tendon, and prescribed Blancard's Potass. lod. pills. This remedy and various hydro-pathic measures appeared to produce no effect, and the disease persisted for about three years, when there Three years. was some improvement, and it was possible to use the limb a little, and walk short distances at a slow gait. A second accident now happened, the great toe was Second accident.  
Toe nail. trod on by a man's heel. Suppuration set in at the root of the nail, which resulted in the metatarsal bone and first phalanx of the great toe becoming diseased. The crutches, which before the second accident were being gradually dispensed with, had again to be used constantly for another four years. Only a wool Four years. worked slipper could be tolerated on the foot, which had to be kept well wrapped up because of its being so cold. The metatarsal bone was very tender to the touch, and no attempt could be made to place the foot on the ground. It had always to be kept in a raised position, while sitting, and soon ached during standing or walking with the aid of the crutches. In the seventh year another accident happened. The horse Third accident. on which the author was riding was suddenly frightened, and in a moment, he backed over a precipice. The resulting fall on the side of the head, and

Fracture  
of the  
acromion.

right shoulder, caused a fracture of the acromion process of the scapula. This was set four times, and in the end healed only by ligamentous union. The bed had to be kept for twelve months, with a plaster of Paris jacket. The accident occurred while riding over mountain paths in Mexico.

Treatment  
of diseased  
bone.

For some weeks previous to this, the author had been impressed with the idea that continuous wet applications would benefit the diseased bone. The confinement to bed furnished a good opportunity for a trial. Wet cloths and lint were applied, being changed night and morning. Gutta percha tissue prevented the escape of the water, and several wraps kept up the warmth. There was a distinct sensation of comfort during the first hour of the application.

Discharge.

The water in which the wet cloths, which were removed night and morning, were washed, was distinctly yellow, while the cloths had a putrescent odour. The foot had to be well washed with soap, on the cloths being removed, in order to prevent the intense irritation which was caused by the impurity expelled from the diseased bone. A wonderful

Vascular  
system.

activity was displayed by the vascular system. A plexus of veins covered the whole of the diseased metatarsal bone. These were charged with a dark venous blood, and the blood supply to the previously cold foot was so increased, that the temperature was raised to above the normal point. Pustules were formed on the integument which were of an exceedingly painful character. After this treatment had been continued about five weeks, there was a marked diminution in the swelling of the diseased parts; they were much less tender to the touch, and the outer

edge of the foot could be placed on the ground so as to take the weight of the body for a few steps. The cloths, on being removed, continued to smell and stain the water yellow for months, though in a less degree, while the foot kept on improving in form and strength. In about four months the natural use of the foot was resumed.

About eighteen months later, still another accident happened to the apparently fated foot. It was wrenched, and the tendo Achillis again began to trouble, and was getting worse each week. There was some lameness, and stairs could only be mounted slowly. The symptoms were similar to those which supervened after the first accident ; and there was fear and even dread that the crutches would again have to be used for an indefinite period. This would be a terrible calamity in the midst of a busy practice. The Achilles tendon was already somewhat contracted, and tender to the touch.

Resolution.

Fourth  
accident.  
Tendo  
Achillis.

The Pyonex was now applied all round the leg. The limb began to swell, and all the integument covering the tendon, turned as black as rosewood. It was impossible to put the foot to the ground. All these symptoms were most welcome, as showing that the seat of the mischief had been reached, and the exciting cause was being brought to the surface. There was also a fair amount of purulent discharge.

Treatment.

Turned  
black.

On the fourth day after the application, the leg could be straightened, and on the fifth, walking could be accomplished with comfort. In a few days more the tendon was strong, and it continued so permanently. Seeing how soon it was restored, there appeared to be a reasonable probability that had there



been an acquaintance with the Pyonex Treatment at the time of the first accident, it would have avoided the necessity of going on crutches for seven of the best years of life.

The successful treatment of the diseased bone, by means of constant wet applications, as stated, was tried, owing to a deep impression that it would do good.

Treatment  
of flat foot  
by water  
dressing.

The same treatment was adopted in the case of flat foot of a girl of fifteen. The arch of the foot was altogether absent, owing to disease of the tarsal bones. Attempts to walk or stand were accompanied by pain. In this case, the wet cloths when removed were so pestiferous as to drive the attendants out of the room. The treatment was continued for four weeks, by which time the swollen and diseased bones were reduced to their normal size, and the natural arch of the foot was reinstated.

Restoration  
of arch.

Only one application of the Pyonex was made, in treating the tendo Achillis, and the relief obtained was of such a radical nature that the tendon never again manifested the smallest sign of weakness.

Com-  
parison.

The Pyonex Treatment has not been tried in any case of diseased bone; it might do good; but for various reasons, the water dressing appears to be preferable.

Pyelitis.

### PYELO-NEPHRITIS.

History.

A patient, aged 32, son of a baronet, stated that he had been under treatment successively by five medical men in London, three of whom were specialists. His affection was diagnosed as tuberculosis of the bladder. The bacillus tuberculosis was stated to have been discovered in the bladder, and

Bacillus  
tuber-  
culosus.

hypodermic injections of good bacilli were being made in order to overcome the morbid ones. But as he was rapidly growing worse, getting thinner and weaker, he came to Cornwall for further advice.

He complained of attacks of acute pain in the left kidney, lasting from about 10 a.m. to 5 p.m., which were so severe, that he locked himself in his room for seven hours at a time, and would not speak to a soul. These paroxysms occurred frequently. Similar pains were beginning to attack the right kidney, and he said "This will do for me."

Renal pain.

There was pain in the bladder, and externally it was tender to the touch. It had to be emptied every hour or two; the stream was smaller than natural.

Bladder.

On passing a catheter I discovered a stricture in the prostatic portion of the urethra; only a No. 4 catheter could be introduced. As the patient stated that he had never had sexual connection, the only way to account for it, was his so often riding and hunting, on a hard saddle. The water was always turbid, and frequently tinged with blood, and contained clots and numerous pus cells. There was habitual constipation, racking pain, want of rest and no appetite. The strength had gone. He could scarcely walk at all, and could not stand up straight without suffering pain. He had been losing weight for a long time and was wasting daily.

Stricture.  
Water.  
Broken health.

It appeared evident that the left kidney was inflamed, though not acutely, as the pulse was about 80. Clots of mucus and blood were constantly forming in its pelvis, and while occupying several hours in being forced through the ureter by the back pressure of the water, caused the prolonged paroxysms which

Diagnosis.

he suffered. As soon as the clots reached the bladder, the acute pain ceased.

Tuber-  
culosis.

I could discover no sufficient grounds for attributing his symptoms to tuberculosis of the bladder, although the bacillus tuberculosis had on various occasions been detected in the water. The pressure of the small quantity of water in the urethra, against the inflamed stricture, appeared to be the cause of the bladder having to be emptied so often.

Critical  
condition.

The patient was in a critical condition, and it was evident that he would succumb, unless the symptoms could be relieved. The serious question that presented itself was, how to improve the condition of the left kidney. Its function was impaired, the lining membrane of the pelvis was breaking up, and disorganisation was threatened. The diagnosis formed was that the morbid condition of the kidney was due to purulent infiltration, and that if the pus could be removed, the symptoms would be relieved.

Causation.

Treatment,  
first  
application.

With a view to accomplish this end, an extensive application of the Pyonex was made horizontally from the diaphragm to the spine, and extending downwards to the bladder.

Effects.

The immediate effect of this was to allay all the pain. There resulted a free discharge of rather light-coloured pus over the whole surface treated. The clots of mucus and blood ceased to form in the pelvis, and the terrible pain caused by their forced passage through the ureter disappeared. A remarkable expression of suffering depicted in the patient's countenance vanished.

Second  
application.

After an interval of five days, an effort was made to remedy the painful state of the bladder by applying

a treatment over the hypogastrium. A free discharge of pus resulted and the pain was relieved. The next application was made four days later on the back, as it was evident that there existed general purulent infiltration of the system, and the back presented a large surface for its expulsion. It was necessary to clear out the pus from all the tissues, in order to restore the healing powers of the kidneys and bladder. A copious expulsion of pus resulted, improving the general tone. A week later the bladder symptoms called for another application on the hypogastrium. In the third week attention was directed to the right kidney, which had begun to pain, and an application was made to the right side, covering the liver, kidney and ureter. There resulted a purulent discharge in every part, and the pain ceased. The fourth week an application was given on the back and over the left ureter. The fifth and sixth weeks, treatments were given on the hypogastrium in order to relieve pain in the prostate; and on the right side, to further clear out the pus. The patient was daily taking a warm bath, which had a soothing effect. Cascara cordial served to relieve the constipation, besides which suitable tonics were prescribed. In the seventh week, a third application was made to the left side. The pain in the prostate and bladder was frequently recurring, so a fourth application was made over the hypogastrium. The water, which had always been turbid and bloody, now begun to improve, and soon became quite clear. Fluid Extract of Araroba and Kavakava were now prescribed, three times daily, the former to strengthen the neck of the bladder and the latter to restore tone to the mucous membrane,

Third application.

Fourth application.

Fifth application.

Sixth and seventh application.  
Eighth and ninth application.

Tenth application.

Eleventh application.

Araroba and Kavakava.

and subdue the inflammation of the prostate. Satisfactory effects were produced in each case.

Resolution. The patient's condition was now much improved. There was no pain anywhere, the appetite was good, and he could walk short distances without inconvenience, and straighten his body with comfort. The face had become fuller and he was gaining weight.

Twelfth and thirteenth application. Two further applications were given; one on the hypogastrium and one on the right side, with a view to clear out any of the remaining pus. The discharge

Discharge. had now assumed a decidedly pale colour, and the quantity was small, and there was no further need to continue the Pyonex Treatment. He returned to his home, continuing to take the F. E. Kavakava, which was decidedly helpful. After a lapse of some weeks, he reported gaining a pound and a half weekly, until he reached his normal weight of twelve stone. I had already advised him that the stricture, in case of still giving trouble, would require to be dealt with by suitable measures. The case is interesting as showing the marked benefit that was derived by removing the pus from the affected parts.

Normal weight regained.

### SPINAL CURVATURE.

Etiology. A rather interesting light is thrown upon the causation of spinal curvature, by the employment of the Pyonex Treatment. The spinal column may be likened to the mast of a ship, which is kept in position by means of the rigging and stays, which are made so taut as to defy the effects of the winds and waves. In the same way the vertebræ are retained in position by their ligaments and muscles; and while



these are in a tonic state, the exact line of the column is preserved. But when the ligaments become lax and the muscles are flaccid, owing to an atonic condition of the system, the proper support on which the spine depends is lacking, and the weight of the head, upper extremities and their accompanying tissues, easily cause the column to sway to one side or the other. When the tensive power of the muscles and ligaments is restored, the vertebræ are again drawn into position and the curvature disappears.

Atony of  
ligaments,  
&c.

#### SPINAL CURVATURE.—CASE 1.

The following case serves as an example: A lady of tall stature and fine figure, aged 22, stated that from a child, she had never been able to walk well, always requiring to be led by some one. When going upstairs, each step had to be occupied by both feet. She had, moreover, not a proper command over the movements of her arms and fingers. Whilst carrying an article across the room she would suddenly drop it. This and other symptoms pointed to hereditary ataxia. She had two brothers in whom this affection was somewhat advanced, and had been considerably benefited by two or three applications of the Pyonex. On examining the spine I found a double curvature. It first left the median line at the nucha, and inclined 2 inches to the right side. It then returned to the median line, and crossing it, went about 2 inches to the left side. This fact served somewhat as an explanation of her inability to walk well. She stated that she was unable to place her feet squarely on the side-walk, and never

Case 1.

History and  
symptoms.

Hereditary  
Ataxia.

Unable to  
walk well.

Dys-  
menorrhœa.

could get a proper grip of the surface. If not led by some one she would fall. She suffered so intensely during the menstrual period, that she had barely got over the effects of it by the time of its next occurrence. It always obliged her to keep her bed four days.

Treatment,  
first  
application.

Treatment was commenced by the application of the Pyonex on the back and chest, which was followed by a considerable discharge of pus. The next return of the menstrual period was unaccompanied by pain, and she remained in bed only one hour. There was a perceptible increase of strength in the general system.

Second and  
third appli-  
cations.

The Pyonex was applied a second and third time over the chest and back, at intervals of three weeks' each time, resulting in a plentiful discharge of purulent matter.

Disappear-  
ance of  
curvature.

After the third application, she was able to walk comfortably without being led by any one. She expressed herself as having more command over the motions of the feet, and being able to set them down evenly, as she took each step. She was also able to go up a flight of stairs, by placing one foot before the other, in the natural way. She also overcame the habit of dropping things from her hands. The spinal curvature had been gradually diminishing from the date of the first application of the Pyonex; and on re-examination, after the third application, it was found to have disappeared altogether. The several layers of the muscles of the back, and the ligaments of the vertebræ, had been so toned up since the expulsion of the morbid matter that had lodged in them, that their strain was now evenly balanced

on each side, and they had drawn all the vertebræ into a straight line. In addition to this, there was a considerable development of new muscle on either side of the spinal column. Conjointly with the straightening of the spine, the uterus was drawn into a better position, and this fact accounted for the disappearance of the severe dysmenorrhœa. She continued to improve and gain strength, until her general health was in all respects satisfactory. The three applications occupied a period of about ten weeks.

New muscle.

Uterus.

Dysmenorrhœa.

Three applications.

## ANTERIOR SPINAL CURVATURE.—CASE 2.

*(See plate at beginning of Book.)*

A lady, aged 61, of ordinary height, and stout, has been scarcely able to do more than walk across the room, and that with pain, for sixteen years, and was in poor health for several years before. She has spent her time in various parts in search of medical aid, and grows worse. Her complaint is pronounced to be disease of the spinal cord. She has kept her bed for periods of six and seven months at a time, while the stomach rejected everything. The lumbar vertebræ are curved sharply forwards and press on the bladder, compelling it to be emptied three times an hour. The hollow in the spine is sufficiently deep to admit of the fist. A severe pain passes from the lumbar region to the upper surface of the thighs. Twenty-five years ago she fell from a horse, and fourteen years ago had a second fall, which produced severe pain in the spine and invalidated her for months. All the limbs are weak; she has no stamina. There is neuralgia in every part and severe constipation. The sight is weak, and

History.

Symptoms.

Curve.

Pain.

Constipation.

Sight. there is pain over the eyes; she can read only for a short time. There is crampy pain in the insteps and shins. Disturbed rest, with muttering. The water

Bladder. passes involuntarily. Nearly all the time is spent in bed; she has to return to bed after being

Weakness. out only half an hour in the Bath chair, or after reclining on the couch an hour or two. She cannot rise from the chair without assistance: cannot dress herself. Every movement of the limbs is followed by exhaustion. She suffers from severe dyspepsia, and

Cold. has little appetite. The feet and body are always cold. She has been unable to walk out of the house for

Pulse. eighteen years. Usual pulse, 110 to 120. Has to take an ounce of F.E. Cascara Sagrada to get an action. She has spent £300 in medical treatment, but only got worse.

This was by no means an encouraging case to undertake the treatment of, but after careful questioning as to the falls from horseback, I formed the opinion that the vertebral ligaments had been injured, and, by gradually giving way, had allowed the vertebræ to get out of position and form the sharp curvature. No disease of the cord could be detected, and I came to the conclusion that it did not exist.

Treatment, first application. Treatment commenced on June 1st, 1896, by an application of the Pyonex to the lower dorsal and lumbar regions.

Second application. June 3. The upper back was treated.

Third application. June 8. The lumbar region was treated.

June 13. She can sit up and sit still for longer periods, has more animation and fewer pains in back.

Fourth application. An application was made to the abdomen.

June 16th and 18th. The upper and lower spine

were treated. She can sit up longer, walk better, and is stronger. Sixth application.

June 24. An application was made to the upper spine. Sensation has improved in the feet, so that hot water bottles cannot be borne as formerly. Seventh application

June 26 and 29. Applications were made to the abdomen and lumbar region. Ninth application.

July 3. The whole of spine and right arm were treated. Tenth application.

Up to this date the treatment had been continued for 33 days. The discharge to begin with was very scanty, and did not augur well for prospective benefit. Gutta-percha tissue was used instead of cotton wool next to the skin, the cotton wool being placed on the outside. This caused a free discharge, which continued to increase in quantity after each application for several weeks. The curvature began to lessen during the first week of treatment, and the spinal column continued to straighten daily, so that at the present date not the smallest deformity can be detected; tone and strength being restored to the lumbar muscles and ligaments, the vertebræ were pulled back into their right places and retained there. The curvature never returned. A marked improvement had taken place in the sight, she could read for hours without glasses. The power of retention was restored to the bladder; all her pains had disappeared. The following applications were made:—July 11th, left leg; 13th, right leg; 16th, lumbar region; 18th, abdomen; 20th, left arm; 22nd, right arm; 24th, right hip and thigh; 27th, lumbar region; 29th, upper spine; 31st, chest; August 8th, lumbar region; 11th, abdomen; 13th, chest; 17th, right arm. The discharge.  
Disappearance of curvature.  
Sight.  
Bladder. Pain.



- Balls of pus. A quantity of thick pus, which could be rolled about in small balls the size of a pea, was expelled. She is
- Strength. able to sit up all day, can rise up or sit down without assistance, can walk without pain.
- Thirty applica-  
tions. Between August 13th and December 2nd, thirteen additional applications were made, the various parts of the body being taken in rotation. The general tone of the system had much improved by this time, and there was a marked increase of strength. The
- Discharge. discharge produced by the Pyonex Treatment now exceeded everything it had previously attained; the cotton had always to be removed on the day after the application, and fresh cotton had, as a rule, to be applied once or twice a day for three or four days. Instead of a lowering effect being produced hereby, which would have been naturally looked for, the strength of the patient steadily increased. The steady flow of pus was a sign of the intensely morbid state into which her system had got. I ordered for the
- Electro-  
vapour  
baths. patient at this time a short course of electro-vapour baths, and the Pyonex Treatment was resumed on January 9th, 1897. Various applications were given between this date and March 3rd. It was now decided
- Steel  
jacket. that a steel jacket should be made and worn in order to support the spine and transfer as much weight as possible to the hips; this proved to be of great service. The condition of the patient continued to improve after the discontinuance of the Pyonex Treatment. She went to Hastings for a change of air, and from there advised me by letter that she had walked
- Walked  
four miles. four miles at a stretch without harm or undue weariness.
- Medicines. Medicinal treatment was kept up all through the

period of the Pyonex application, and was of marked benefit in strengthening the bladder, in aiding the digestion, in soothing irritation, toning up the system, and regulating the action of the intestines.

Occasional Pyonex applications were made after this period, because the discharge of morbid matter had not ceased. One application was made with a view to still further strengthen the sight, and another to remove symptoms of gout from the great toe, and others to tone up the system. The figure, which at the commencement of the treatment was decidedly stout, was now so reduced in size that the waist was of good form and of such a calibre as to become the stature; the neuralgic pains, vesical irritation, insomnia and dyspepsia had completely disappeared.

This was a remarkable case. She said that her relations regarded her restoration as a miracle, considering the terrible state she was in and the length of time she had been afflicted. Also her regular Doctor, whom she visited on returning to her home, was much surprised at seeing her so much better, and frankly told her that when he wished her good-bye he did not again expect to see her alive.

There are one or two points about the treatment of the case which are unique. The purulent discharge during the first month was so scanty as to be scarcely sufficient to encourage the continuation of the treatment, but the patient felt better and wished it to be continued. Soon after, the discharge, by using the gutta-percha tissue, became exceedingly profuse; in fact, more so than in any other instance. It continued to pour out in surprising quantities for several weeks, and seemed as if it would never stop. But finally it

Further  
applica-  
tions.

The figure.

Remarks.

The  
discharge.

grew less and less, until at last the expulsion was small and of an innocent character.

Frequency  
of applica-  
tions.

Another point is the frequency of the applications. In no other case were they made at such small intervals. The tolerance of the treatment was extraordinary. Instead of any resulting weakness there was a steady accession of strength and tone. The fact of this course being the most judicious was arrived at by most careful watching.

## SECTION III.

### APPENDIX I.

#### *GENERAL DIRECTIONS.*

1. EFFECTS OF THE PYONEX TREATMENT ON THE EPIDERMIS, CIRCULATION, AND MUSCULAR TISSUE.
2. SWELLING PRODUCED BY THE TREATMENT.
3. COUNTER-IRRITATION PRODUCED.
4. EFFECTS DUE TO THE ABSORPTION OF THE OIL.
5. NATURE'S INHERENT EXPULSIVE POWER.
6. WHY INSUFFICIENT.
7. RESULTS OBTAINED BY AIDING IT.
8. CIRCUMSTANCES WHICH AFFECT AN APPLICATION.
9. THE EXPULSION OF TYPHUS VIRUS.
10. SYSTEMIC EXCITEMENT CAUSED BY AN APPLICATION.
11. TOLERATION OF THE TREATMENT.
12. ELIMINATION OF VIRUS BY LUNGS AND BY TREATMENT.
13. DEGREE OF VITALITY ASCERTAINED.
14. THE TREATMENT WITHOUT EFFECT IN HEALTH.
15. PYONEX EFFECTS COMPARED TO AN ISSUE.
16. THE DISCHARGE—THE BENEFIT DEPENDS ON.
17. INCREASED VITALITY AND HEALING POWER.

**EFFECTS OF AN APPLICATION ON THE EPIDERMIS.**

- Pores. Our first action in using the Pyonex instrument is to create a number of artificial pores in the epidermis. A light tap with the needles is sufficient to accomplish this, 33 pores being made by each tap. The peripheræ of the nerves that are thus exposed are brought into contact with the stimulating oil, which is applied with a brush to the part. The more active ingredient of the oil, which is Lytta, reddens the skin, and a sensation of warmth is produced. This warmth, which is of a comforting nature to the patient, is felt a few minutes after the application of the cotton-wool, and lasts an hour or more. The first glow afterwards merges into a lower temperature, which commonly lasts until the effect of the application subsides, the interval being about two days.
- Warmth created.
- Lesser glow.
- Analgesic. During the first glow it is a common occurrence for any pain which may have been present in the part treated to disappear, and frequently it does not return. If the perforations are made in close proximity to each other, the pain is often relieved before the oil is applied. In either of these cases its cessation is due to counterirritation, which, in the latter case, is caused by the needle-punctures; but in the former, by the combined effect of the punctures and the stimulus conveyed to the nervous peripheræ by the oil. On the second or third day there may be a little cellulitis or œdema, which soon disappears.
- Cause.



## EFFECTS ON THE CIRCULATION.

In cases where a double application is made, *i.e.*, to the back and chest, at the same time, the stimulating effects are produced over a large surface, and there is a gentle stimulus conveyed to the heart, resulting in a rise of the pulse, from five to ten beats per minute. The natural pulse of 75 may be increased to 80 or 85. This is unaccompanied by any symptom, and unperceived by the patient. But where the more usual method is adopted of treating only the back or chest at a time, the effect on the heart's action is barely perceptible. The same is the case if an equal surface be treated in any other part of the frame. If the patient is the subject of any undue nervous excitement, the symptoms may be dealt with in the ordinary way. A dose of Potass. Bromid. or 30 grains of Chloral Hydrate at bed-time, will serve as a quietus.

Pulse more frequent.

Quietus.

## EFFECTS ON THE EPIDERMIS.

In some cases the taps of the instrument are followed in a few minutes by prominent macules, the perforations presenting the appearance of a plucked goose. But the usual course is for this appearance to supervene some hours after the application. The macular stage, after a few hours, is followed by the papular.

Macules.

This stage lasts also a few hours. The papules are distinctly formed by the pushing up of the epidermis from beneath, and will not disappear on pressure by the finger, as in the case of the macules.

Papules.

In about twenty-four hours the papules begin to merge into vesicles.

The vesicular stage usually lasts twenty-four hours.

Vesicles.

During this stage the vesicles become filled with a semi-transparent serum, which has a consistence somewhat thicker than that of ordinary serum. The vesicles continue to increase in size and their contents gradually become more opaque, until at the termination of forty-eight hours, they merge into pustules.

If the pustules take more than forty-eight hours to mature, it is owing to a difference in the composition of the oil.

**Pustules.** The pustular stage lasts about twenty-four hours. During this time they steadily increase in volume, and their contents, by degrees, assume the character of well-matured pus. The pus may be thin or thick, as more particularly alluded to elsewhere.

**Results.** The best results follow when 55 or 60 hours are occupied in the formation of the pustules. If they mature too soon it will probably be owing to the oil being a trifle too strong (in which case it should be diluted with ten or fifteen per cent of ol. amygd. dulce), or in its being more freely applied; a third cause may be unusually hot weather, which always produces increased activity.

**Integument.** The effects of the treatment on the skin are often of an inflammatory nature. When there is much virus to be got rid of, and it is of an irritant nature, the whole of the surface between the perforations becomes red and hot, outside the line of the inflamed surface, extending an inch or two beyond the artificial pores which are created by the instrument. The redness begins to lessen on the third or fourth day after the application, and takes a day or two to disappear.

**Natural.** But when the morbid element does not exist in

large quantities, or when it is not of an irritant nature, the skin which is between the perforations may retain its natural appearance throughout the whole period of the treatment.

Another common effect, in severe cases, is for the pustules not to be confined to the perforations of the needles, but absolutely to cover the whole cutis so completely, that it is not possible to lay the head of a pin on any part without touching a pustule. These pustules are smaller than those at the perforations. Covered with pustules.

On the fourth or fifth day a second crop of pustules may be thrown out, which are sporadic, and usually not very numerous; they are, however, three or four times the size of the others, well rounded and filled with pus, which is a shade deeper in colour. Sporadic pustules.

#### THE IMMEDIATE EFFECTS OF THE PYONEX TREATMENT ON THE INTEGUMENT WHICH LIES BETWEEN THE PERFORATIONS.

This intervening integument may remain white and perfectly unaffected after the time of the maturity of the pustules, which usually takes place in about 48 hours. The conclusion we draw in such cases is that the quality of the pus which is expelled is comparatively innocent, and the quantity in the tissues small. White.

When the colour is roseate, the matter which is discharged is of an irritant character, and the affection which is being treated is not of so serious a nature. Roseate

But if it be of a pronounced red the resulting pus is decidedly toxic and irritant, and the inflammatory condition of the integument may be kept up for some days, while the pus expulsion is gradually dying away. This condition is constantly seen in cases of laryn- Red.

gitis, pharyngitis, and asthmatic and other bronchitic affections.

Covered  
with  
pustules.

The intervening integument may be partially or wholly covered by large or small pustules, which denote the presence of a larger or smaller quantity of purulent products in the tissues.

Papules.

The integument may be wholly covered by minute papules which are hard and gritty to the touch, and may be removed in immense numbers by friction with the hand. These papules consist of decayed and dried-up pus, which has lodged in the parts for several months or even years. This is usually termed "miliary" irruption.

Under-  
laid.

Lastly, the intervening integument may be completely underlaid by a substratum of pus, which causes its upheaval in every part, and completely separates it from the adjoining tissues. In such cases the purulent infiltration has reached its highest point, and the copious quantities of purulent ingredients which are discharged are surprising.

## EFFECTS ON THE MUSCULAR TISSUE.

### OOZING OF PUS.

Oozing of  
pus.

In old standing cases of asthma, bronchitis and other affections, the pus occasionally continues to ooze

Crusts.

for several days through the new pores, and dries up in cakes or crusts, which are composed of layers, and but slightly adherent to the cutis. This maintenance of the expulsive action is of decided advantage, and contributes to the more immediate relief of the patient.

The evolution caused by the treatment on the muscular tissue and ligaments is of an important and interesting character.

The effect of the increased supply of blood which is brought to the part by the subcutaneous absorption of the stimulating oil, soon begins to manifest itself in the rapid multiplication of muscle cells and the reproduction of capillaries and muscular fibre. In cases of chronic chest affections of a bronchitic or asthmatic nature, where almost the whole of the muscular tissue has gradually been absorbed, or when a part has become atrophied by disease, and extreme emaciation ensues, it is most interesting to watch the formation of new muscle. Even when the ribs are covered only by the cutis, and every intercostal space is so sunk that some ingenuity is needed to place the instrument, so as to make the perforations on the intercostal muscles, and at the same time avoid bringing the needles into contact with the bone, and in other cases where the scapulæ form two promontories on the dorsum, and the hollow between them is so deep that the spinous processes of the vertebræ form a projecting ridge, and when, in addition to such a general atrophy of the soft tissues, the vital forces are so reduced that there is no longer power to turn the body when recumbent, or even to move one of the extremities in consequence of every joint being ankylosed, owing to the ravages of affections of a rheumatic diathesis, when moreover, the heart's pulsations are never less than 110 to the minute, and every power of the human frame is at its lowest ebb, we may still look on and admire the wonderful recuperative action which is effected by

Effects of  
increased  
blood  
supply.

New  
tissue.  
In extreme  
emaciation.

Vital  
forces.



Vascular system. Reproduction.	the Pyonex Treatment in the capillaries and vascular system. Not only is there a rapid process of reproduction set up in the fibrillæ, which form the body of the
Nerves.	muscles, but the new nervous filaments, as well as
Arteries.	the arterial and venous channels which are necessary for the maintenance and perfection of every function appertaining to the newly-formed fibre, likewise form a part of this novel creation, wherein every tissue fulfils its divinely-appointed duty and works in harmony with its neighbour.

While the double process is going on of the expulsion of the virus which caused the atrophic condition of the parts, and the conveyance to them of such a supply of blood as is adequate to the task of setting up and carrying on a process of reproduction, we see from week to week these hollow places being refilled with new tissues, until the original figure of the patient is finally reinstated.

Reinstatement of tissues.

Cause of reinstatement.

This reinstatement is not due, as might be supposed, to any general improvement in the system, but its cause is to be found in the application of the Pyonex to the actual part. If, for instance, when the emaciation is at an extreme point, such as above described, four or five applications be made to the back, above a line drawn immediately below the inferior angles of the scapulæ, allowing an interval of about ten days between each application, it will be found that notwithstanding the fact of a great improvement having taken place in the general condition of the patient, the parts of the dorsal and lumbar regions, which are below the scapulæ, still show the atrophied condition which they were in, at the commencement of the treatment; while from

the nucha to the sub-scapular line, where the treatment has been applied, every square inch is so covered with new muscle as no longer to show a sign of the previous emaciation. This process of the reproduction of muscular tissue may be kept up by a continuation of the treatment, until the muscles attain such a volume and strength as is altogether abnormal.

Abnormal  
increase of  
tissue.

In a case of epilepsy, for example, where the treatment was persevered in for nearly two years, with a view to ascertain whether the disease could be successfully combated, during this time over a hundred and sixty applications were given, with the effect that the paroxysms, though not entirely prevented, occurred only at greater intervals. But the increase in the volume and tonicity of the muscular system was extraordinary. At the end of the stated time the patient's muscles were much larger than they had ever been, and his strength had abnormally increased to about double of that which was natural for a man of his size. He performed various feats of strength which were beyond what any two men of his size could accomplish.

A case.

One  
hundred  
and sixty  
applica-  
tions.

Strength.

### SWELLING.

A common result of the application of the Pyonex is for the part treated to become swollen. When, for instance, the upper or lower extremities are treated, and the cotton wool is secured by bandages, the swelling is often such as to necessitate the loosening of the bandages on the second and third days after the application.

Swelling.

Bandages.

The amount of swelling is in proportion to the

quantity and character of the discharge in some cases, while in others it depends on other causes.

In chronic affections.

In the treatment of chronic affections the swelling is most marked at the commencement of the treatment. As the expulsion of the virus proceeds, so the swelling of the part under treatment diminishes. Four or five days, or more, may be required for the swelling to completely disappear, and a second application to the part is never made until this takes place. After each application the swelling is less, until it is no longer perceptible. The applications, if continued longer than necessary, will neither produce the smallest pustule nor the least swelling.

Un-necessary applications.

More swelling than discharge.

Offending element.

In some cases the whole of a limb which is treated becomes considerably swollen, while there is only a small discharge of pus. This is accounted for by there being in the deeper tissues an offending element which is not expelled in the form of pus and which, being dislodged and distributed through the adjacent soft tissues, for the moment acts as a toxicant and causes them to swell. It is soon carried off by the circulation and the swelling disappears.

Carried off.

Benefit.

In all such cases the beneficial effect of the treatment experienced by the patient, is quite as marked as if the purulent discharge had been greater and unaccompanied by swelling.

Analogy.

Metastasis.

There appears to be some analogy between this swelling and the cessation of pain in a tooth when the face swells. This offending element, the nature of which we have no means of ascertaining, passes from the painful tooth into the adjacent soft tissues. The pain disappears from the tooth, but the face becomes inflamed, hard and considerably swollen.

The element, which has migrated from the tooth to the cheek, is evidently not a bacillus which might be expelled from the system in the form of pus, but it appears to be some adventitious toxic fluid which was either conveyed to the part or generated in it by the operation of a low temperature or a cold draught, or, it may be, some semi-inflammatory condition of the nervous filaments which is capable under certain circumstances of performing an act of metastasis.

Not a  
bacillus.

### KINDS OF COUNTERIRRITATION.

The counterirritation which is produced by an ordinary blister, or a mustard poultice, often relieves pain, although, owing, perhaps, to their operation being so rapid, the offending element appears to pass out of the system at once, without there being sufficient time for the soft parts to get into a tumid state.

Action of  
blister and  
mustard.

For the simple operation of removing a pain, the causation of which may be attributed to such an element, the effect of the Pyonex Treatment, or a mustard poultice, or blister, appears to be identical. But the blister is slow in its action, requiring several hours to mature; while the mustard is violent and cannot be long borne.

When  
identical  
with  
Pyonex.

Compari-  
son.

The Pyonex can be regulated so as to have either a gentle or an extremely counterirritant effect, which is brought to a climax in a few minutes, and is borne by the patient without discomfort, while if so desired, the counter-irritation in a lesser degree may be continued for three days, instead of only a few hours.

Regulation  
of effect.

But if it is desired to remove a disease, which is caused by the presence of a purulent element in the tissues; experience shows that it cannot be effected

Removal  
of disease.

Serum from  
a blister.

Pus from  
the Pyonex.

Therapeutic  
effects of a  
blister.

Hindrances  
to  
repetition.  
New  
symptoms  
and stages  
in the  
treatment.

by simple counterirritation. It is true that a blister, in addition to its action as a counterirritant, extracts from the circulation a certain quantity of serum, and it is only fair to infer that this serum is to some extent charged with a morbid element. But having made this admission, we are brought to a stop. The concomitant circumstances of the successive repetitions of a blister, are such, as to preclude such repetitions from general practice ; and even if this were not an insuperable obstacle, the results which are effected by the Pyonex Treatment could not be attained hereby. In the one case only serum is expelled ; while in the other, there is a thick toxic pus. And it is on the expulsion of the latter from the affected tissues, that we depend, for removing the disease and restoring the part to a healthy state.

The therapeutic effects which are derivable from the application of a blister, are such as are calculated to be produced by its application externally only. The absorption of the emplastrum, or any part of its stimulating quality, by the tissues with which it comes in contact, is not thought of ; and it is, moreover, usually so slight, that no attention is called to it. Besides this, the disorganisation of the cuticle which follows, and the severe irritation, are among the more prominent hindrances to its frequent repetition to the same part. But when the object of a Pyonex application is not to relieve pain, we do not look for beneficial results merely because of its external counterirritant effects ; but our attention is directed to the fact, that the oil has entered the system through the artificial pores in the epidermis, and we are watching with interest for an entirely new set of



symptoms; also the irritation, progress and accomplishment of new stages in the treatment, from which we are led to expect results, which are widely different from anything that could be effected by simple counterirritation.

The first passes of the brush over the new pores cover them with oil, and in two or three minutes, nearly the whole of this oil disappears, passing in through the pores, and becoming absorbed by the adjacent tissues. The small proportion of Lytta which is contained in the oil, now enters the capillaries, and becomes distributed through the surrounding parts. The effect of this is, to produce a stimulating or quasi-inflammatory condition of the parts. The degree of stimulus to be communicated may be regulated, either by the proximity of the perforations, or by the strength of the oil, so that the exigencies of each case are exactly met.

Absorption  
of the oil.

Its stimu-  
lating effect  
and its  
regulation.

After the surrounding tissues are sufficiently impregnated with the oil, a process goes on in the system by which diseased cells, bacilli and other morbid germs of an organic nature, also adventitious mineral impurities, if present, are gradually brought together and expelled through the same artificial pores which served as an entrance for the oil. All these offending elements are thrust out in greater or lesser quantities, according to the nature of the affection, and expelled in the form of pus.

Expulsive  
process.

### UNAIDED NATURAL EXPULSION.

It is interesting at this point to consider what the system accomplishes under certain circumstances,

Unaided  
expulsion.

without being aided by any remedial measure, its actions being purely automatic or idiopathic.

Septic  
element in  
variola  
expelled.

When, for instance, the toxic element has been taken into the system which, after passing through its period of incubation, produces variola, the system makes an effort to get rid of it, and expels the greatest part, which appears externally in a characteristic pustule, which we name small-pox. The same process takes place in the case of the toxic element, which is of a somewhat different kind, which produces

Varicella.

Eczema.

Pimples.

Inherent  
expulsive  
power.

Discharge  
from eyes.

varicella. In the case of eczema pustulosum, another kind of toxic element is expelled in the form of pustules. The same may be said of all kinds of the commonly called pimples, which appear on the countenance, or some part of the body, consisting of impurities which were lodging in the system, and are got rid of by the inherent expulsive power of the human frame; we are constantly witnessing such results. Another example of the expulsive power of the system may be seen by covering the eyes with a light piece of linen, or a folded pocket handkerchief, holding the head back and keeping them closed for a few minutes. If they have been overworked, or if they are affected by cold, or are weak and unequal to their proper-duty, they will begin to discharge a purulent matter, which causes the lids to adhere to each other, and blocks up the exit. If then this crust be removed, and the handkerchief be replaced (the covering must warm the eyes, but not make them hot), and the eyes be closed, the expulsive action will start again, until probably at the second or third time of repeating the operation, the discharge entirely ceases. The

eyes are then sensibly stronger, relieved of weariness, and again ready for duty.

In cases of ophthalmia and other kindred affec-<sup>In</sup>  
tions, the discharge may be profuse. The purulent ophthalmia.  
matter in these cases is forced out between the lids, which thereby become partially separated. The continuation of the process of expulsion is nearly always checked by the barrier of dried matter which becomes adherent to the lids. And were there no barrier formed, the discharge would continue, until the store of the impure element was exhausted.

Again, for example, in the case of anthrax, when Anthrax.  
it is caused by an impurity which is taken into the system either through the lungs or the digestive tract, as also in the case of boils, which are thrown Boils.  
out here and there, the toxic element is gathered from the different parts of the system to one spot, before being finally got rid of.

In all these cases, *i.e.*, variola, varicella, eczema, Purulent  
pustules, eye discharge, boils and anthrax; the offend- Elements.  
ing impurity is expelled from its habitat in the form of pus, and after the process of expulsion is completed, the disease usually disappears. It is therefore evident that all these exciting causes exist in the system, either in the form of pus or in a form which is converted into pus during the process of expulsion.

The main effect of the Pyonex Treatment, is Object of  
to set up in the system, a process whereby the treatment.  
exciting causes of these, as well as of other diseases, are expelled.

### NATURE'S EXPULSIVE POWER, INSUFFICIENT.

Ineffective  
expulsive  
efforts.

It is sufficiently evident that in some affections the expulsive efforts which are made by nature, are so weak and ineffective, that the quantity of toxic matter expelled, makes no material difference to the progress of the disease. A few pustules may be thrown out, here and there, which may be taken as signs of the mass of virus, embedded in the deeper tissues, which the unaided powers are wholly incapable of dislodging or expelling.

Reasons for  
same.

There are various reasons why the system, unaided, is unable to expel many morbid elements, which constitute the exciting causes of severe types of disease.

No outlet.

To begin with, there is no outlet. The cuticle forms an unbroken envelope or sac, over the whole of the human frame, and is itself a barrier. The only

Exception.

exception being the conjunctival surfaces of the eyes and lids, to which we have already alluded, which are not sufficiently impervious to interfere with the expulsive action. In support of this statement, we may look at the way in which the discharge is

In variola.

expelled in variola. The first pocks are thrown out on those parts, where there is the smallest barrier ;

Face and  
wrists.

*i.e.*, the face and wrists. The pores in both of these places are kept open by frequent ablutions, and the cutis of the wrist is very thin. These points being the easiest exits, are the first which are availed of

Expulsion  
in variola.

by the system, for the expulsion of the virus ; and throughout the course of the disease, the face especially is the favourite outlet ; the discharge being greater here than at any other part.

A second reason is, that the gradual accumulation of a morbid product in a part, such as pus, for example, promotes the absorption of the part. The capillaries become blocked and atrophied, and finally disappear altogether. The circulation has no power to battle successfully against the ever-increasing virus, which continues to invade and disorganise the tissues, as long as its accretions are multiplied. This matted state of the tissues, checked flow of blood, and diminished vitality, are the antithesis of the actual requirements of the case; a circulation of greater rapidity and larger volume being necessary in order to initiate a process of repair.

Absorption promoted.

A third reason is, that the offending element is often lodged in the deeper layers of muscles, or tissues, and nothing short of such a rapid circulation as is attained in a high symptomatic fever, would suffice to overcome the obstruction caused by it, and finally bring it to the surface.

The deeper tissues.

We are led to conclude from the foregoing facts, that the inherent expulsive power which is possessed by the system, is exercised by it to the utmost extent that circumstances admit of. Also that if certain obstacles are removed, and suitable aids provided, this process of expulsion of morbid elements may be so promoted, that the whole of them may finally be thrust out.

Conclusions.

### RESULTS OBTAINED BY AIDING THE NATURAL POWERS.

By the judicious application of the Pyonex Treatment, we have it in our power to remove the obstacles, and to furnish such aids as may prove effectual to our obtaining the end in view.



An exit  
provided.

By making artificial pores, we tap the envelope of the epidermis, and provide a suitable exit for all kinds of purulent and morbid products that may be harboured in the system.

A stimulus  
introduced.

By the subcutaneous introduction of the oil, the impaired vitality of the part is overcome; an active circulation is promoted; and while on the one hand, the offending impurity is thus reached, and expelled from its lurking place; on the other hand, the natural reproductive powers are resuscitated, and there is set up a process of re-installation of new and healthy tissue.

Deeper  
tissues.

When the pus is lodged in the deeper tissues, it may be successfully reached and expelled, by repeated applications. The impurity which is nearest to the surface, naturally is the first to reach the new pores, and as the treatment is continued, the deeper tissues are compelled to disgorge, until not a vestige remains behind, and not a pustule can be produced by further application of the Pyonex.

### TRANSIENT EFFECTS PRODUCED BY AN APPLICATION OF THE PYONEX.

Transient  
effects.

The consideration of these minor effects, is naturally an interesting one. There are several circumstances which call attention, but the more prominent are, the temperament, and the more or less morbid condition of the system.

Usually  
imper-  
ceptible.

In the vast majority of cases, the disturbance which is caused by the process of the expulsion of pus is so small as to be almost imperceptible. Patients may freely take exercise in the open air,

and pursue their ordinary avocations. They eat, drink and sleep well, and have no pain in any part.

But in exceptional cases, where the affection has been of long duration, and of a painful nature, there may be a return of some of the former painful symptoms during the expulsive stage. In cases, for instance, of chronic eczema, rheumatism, &c., when an application has been made over the back and shoulders, there may for a day or two be a return of the old pains in the shoulder joints or elsewhere. The pains may be accompanied by a certain amount of stiffness, extending to the muscles, curtailing the free use of the part. Persons of very delicate temperament must be dealt with accordingly, a smaller surface being treated. If the back and chest are treated at the same time, the pulse may rise to 80 or 85 on the second day. This increase is not perceptible to the patient.

Exceptional.

Old pains.

Pulse.

Exceptionally there is a wakefulness at night, which is due to this increased activity of the heart, when a composing draught of half a drachm of chloral hydrate sets matters right. Veronal, hedonal or isopral have the same effect, and are of a very mild nature.

Wakefulness.

But in order to appreciate what may happen when an extensive application is made, to a patient whose system is highly charged with a very noxious element, let us take as an example, a case, where a sewer gas poison has been received into the system, and its toxic nature is such that it will in due course result in typhus fever.

Extensive application.

Sewer gas.

**EXPULSION IN TYPHUS.**

Elimination  
of the  
poison.

After the exciting cause has passed through its usual fermentative course, which occupies about fourteen days, termed the period of incubation, it produces a set of symptoms which are of a serious nature, and are principally marked by an intense symptomatic fever, which is frequently so high that the strength of the patient becomes exhausted, and he dies of asthenia. The high fever, which is produced in such cases, may be regarded as the effort which the system is making to get rid of the poison. This toxic element is constantly brought in contact with the air that is received into the

The lungs.

lungs, by means of the circulation of the blood in their capillaries. Its strength is, in this manner, gradually consumed. The large volume of oxygen, which is required in order to carry on this process of slow combustion, is manifested by the rapid breathing of the patient.

Recovery  
depends on  
vitality.

If the strength of the patient be sufficient to stand this exhaustive process, the morbid element is thus eliminated from the system, and recovery sets in. But the quantity may be so great, and the quality so virulent, that the exhalation carried on by means of the lungs is quite incapable of combating it. In such cases the various tissues become infiltrated to such a degree, as to rapidly lead to disorganisation or mortification, and the termination of life.

Action of  
the Pyonex.

The action of the Pyonex in such cases is analogous to that which is naturally set up by the system, in its efforts to thrust out the exciting causes of disease. In the one case the process is slowly accomplished by the unaided natural forces; in the

other an exit is provided, and a stimulus is given to the system, whereby it is enabled to expel the virus rapidly.

### PULSE AND INSOMNOLENCE.

It is evident that the amount of constitutional disturbance which may be caused by an application of the Pyonex, will always be in proportion to the extent of surface which is covered by the application. Extent of application.

If only six or eight square inches of the integument be treated, in all probability the patient will not perceive any effects beyond the warmth communicated by the application.

If, as stated, the whole of the chest and abdomen be covered by the application, an acceleration of four or five beats per minute may be detected in the pulse. If, in addition to these parts, the whole of the back be treated, the frequency of the pulse may be increased about ten beats per minute, and there may be wakefulness at night.

As regards this insomnolence, which is at times produced by the application, there is no means by which it is possible to ascertain beforehand whether the patient may be thus affected or not. But patients of an excitable disposition, as well as those whose systems have been greatly reduced in strength by long illness, and those who are suffering from nervous prostration, are especially predisposed to a certain amount of insomnia, which is generally confined to the first night after the application of the treatment. Insomnia.

Toleration.

**TOLERATION OF THE TREATMENT.**

It will also be found that some patients tolerate the treatment much better than others, although they may be suffering from the same ailment, and apparently be in the same state of health. This difference is analogous to the different effects which are produced by the same medicine on different individuals. There is no cause for alarm in these cases, as whatever may be the constitutional effects, the symptoms, as a rule, subside in two or three days, and the after stages of the treatment run their usual course.

**COMPARISON WITH TYPHUS SYMPTOMS.**Com-  
parison.

If a very extensive application be made to a patient whose system is highly charged with morbid matter, the amount of constitutional disturbance caused thereby, and its accompanying fever, may somewhat resemble that which is produced by the exciting cause of typhus or a kindred fever, although the symptoms will be so much modified as to involve no danger.

Elimination  
by the  
lungs.

If we compare the two cases, we find that the same process of elimination is going on in each. In the case of typhus fever, to which allusion has been made, the morbid element has no other way to escape from the system, than by a process of slow combustion through the lungs. In order for the system to accomplish this end a period of several days is necessary, during which the onus thrown upon the lungs is so great that their normal function may be doubled; the usual number of fifteen respirations per minute being increased to twenty-five or thirty.

Respira-  
tions.



But in the case of the expulsion of a deadly virus, where an extensive application has been made with the Pyonex, the integument which covers the body no longer forms an impermeable envelope which prevents the escape of the morbid element, and forces it upon the delicate lung tissue; but the artificial pores serve as an exit for the blood impurity. The system immediately avails itself of this channel, and the morbid matter oozes out with comparative rapidity.

Expulsion  
by the  
Pyonex.

#### OOZING AFTER TREATMENT.

When there is an oozing of a serous fluid, after the usual eruption has disappeared, it is a good plan to favour it in every way. Warm linseed meal poultices or hot fomentations may be applied, by which the outlet will be kept open, and the beneficial drain of morbid matter will go on.

Help the  
discharge.

If there be several points from which this oozing occurs, the effectual purgation of the system is accomplished in less time. The oozing process ceases in all points at the same time, and all the outlets close up together.

Several  
points of  
discharge.

It may be taken as an invariable rule, that this drainage will cease as soon as the system is cleansed.

Cessation  
of  
discharge.

#### VITALITY.

In some exceedingly rare cases it is difficult to ascertain what is the exact state of the vitality of the patient, and to determine whether it is advisable to apply a small treatment for the purpose of a test.

To ascer-  
tain the  
vitality by  
the Pyonex.

## TEST APPLICATION.

The  
redness.

In such cases, special notice should be taken of the effect which is produced by the instrument on the skin. If the vitality of the patient is up to par, the perforations made by the needles will rapidly assume a roseate hue, and the redness will become two or three shades deeper, after the oil is applied. But if the redness caused by the punctures be barely perceptible, the handle of the instrument should be drawn out a little further, so as to increase the force of the blow.

Proof of  
low vitality.

If the punctured skin still remains pale, it may be taken for granted that the vital powers of the patient are at a low ebb, and a general application of the instrument might prove a too serious drain on the strength. It will then be advisable to apply the treatment over a small extent of surface, and to be guided by its effects, whether the subsequent applications may be made more extensive or otherwise.

Effect of  
small  
applica-  
tions.

The ultimate effect of the smaller applications will be quite as satisfactory as that of more extensive ones; the main difference being that a longer time is necessary for the expulsion of all the morbid matter from the system.

## WITHOUT EFFECT ON A HEALTHY SUBJECT.

It may here be desirable to make a passing reference to a point which has been already mentioned.

Action of  
the Pyonex  
in health.

It has been supposed by many that the application of the oil to the newly made pores, would produce pus in any person whether invalided or not. But this is not so. The oil is not strong enough to accomplish this. If an ordinary application be made to a person

whose system is free from impurity, not the smallest effect is produced. The skin is not reddened, not a single pustule is formed, nor is there the smallest constitutional disturbance. On the second day after the application, when all the usual results come to a climax, it is barely possible to discover where the instrument was applied. No effect.

There is another way of proving this, *i.e.*, supposing an application be made to the arm, and results in a copious discharge of pus. The second and third applications will yield less, and the fourth still less ; and so the resulting pustules will be smaller and fewer after each application, until finally they cease to appear altogether, and it is not possible by hard taps of the needles, or by any amount of brushing in the oil, to produce a single pustule. Result of repeated applications.  
No effect.

### ITS ACTION COMPARED TO AN ISSUE.

It was a custom among medical practitioners forty or fifty years ago, to make what was called an "issue," in any part of the body, where there was a fixed pain or other symptoms, which could not be relieved by ordinary methods. An "issue."

This was done by cauterising a circular spot of the skin, about the size of a shilling ; the centre of this spot was cauterised to a sufficient depth to retain a pea, which was secured in its position by adhesive plaster. By this plan the part was precluded from healing, and continuous suppuration was maintained. How made.

An outlet was thus established, by which the morbid element which caused the pain was expelled from the system. Its effect.

The action of the Pyonex Treatment is similar to

Com-  
parison  
of the  
Pyonex.

that of an issue. Its action is not, however, confined to a small spot, as in the case of the issue, but may, in case of need, be extended over the whole of the chest, abdomen and back; so that whatever morbid elements may lodge in any part of the system, an exit is provided in their immediate proximity, by which they may be expelled.

Kept open  
for weeks.

The issue, which was kept open by means of a pea, was maintained in this state as a rule for weeks, in order to accomplish the desired end. The exit being small and isolated, and the natural forces being unaided, the process of driving out the morbid matter was necessarily slow.

Rapid  
action of  
Pyonex.

But in the case of the Pyonex Treatment, the expulsion of blood poisons, and morbid and foreign elements, is greatly accelerated, not only because of the four or five thousand exits that are provided by the artificial pores, but also by the absorption into the tissues, and circulation of the stimulating oil, which conveys to the part new life and vigour.

Action of  
the oil.

To every point where the "*vis naturæ*" has been reduced to a low ebb, by the presence of so much impurity, the inrush of the oil brings the stimulus that is needed. The new accession of strength imparted to the circulation, and the increased volume and rapidity of the current of the blood, are such, that the barriers which are met with in the semi-consolidated tissues are soon broken down and dissipated. By the accomplishment of this, the disease toxins which were so long deposited in the affected parts are dislodged, and expelled through the artificial pores; the surrounding tissues, no longer burdened by morbid productions, soon resume a healthy tone, and the

Disease  
germs.

natural forces have again a free hand in building up a healthy system.

#### THE BENEFIT DEPENDS ON THE EXPULSION.

With certain exceptions, the *beneficial effect* of the Pyonex *depends* on the expulsion of morbid matter from the system. The main object to be kept in view during treatment is therefore to establish and maintain the expulsive action at its most effective point.

Main  
object of  
treatment.

In the vast majority of cases there is no difficulty in gaining this end, without taking any special measures. Where there is a fair amount of vitality, the system readily responds to the treatment, and the case progresses favourably.

But in cases where the vitality is reduced a long way below par, by long-continued illness, the temperature of the body may be some degrees below the normal point; and the patient never so comfortable as when in a hot room, or exposed to the direct rays of the sun.

Reduced  
vitality.

On looking for the discharge in such cases, one may be disappointed by finding scarcely any; and the conclusion may be come to that it is not a suitable case for the treatment. Such, however, may not be the case. The application should be repeated three or four times, the perforations being made a little deeper, the oil being brushed in by repeated strokes, until the process of absorption ceases. If it appear that the oil has been removed by pressure, or by the rubbing of the cotton wool, gutta percha tissue should be placed under the cotton wool. Every subsequent application will then produce more activity

Erroneous  
conclusion.

Remedy.



in the part, and finally the expulsive action will be thoroughly established.

Interrupted  
treatment.

If the course of treatment be interrupted for an interval of some weeks, on its resumption it may be necessary to give two or three applications, in order to re-establish the expulsive action.

### THE EXPULSIVE PROCESS.

The increased vitality communicated to any part by the Pyonex Treatment, *i.e.*, the increased temperature and activity in the circulation, combine to attract to the part the exciting cause, which has been lodging in a neighbouring joint, or some of the deeper tissues, with the effect that it may become tumid or inflamed, owing to the presence of this toxicant exciting cause. After this has been dislodged from its lurking place, and distributed over a larger area, the circulation is able to deal with it, and carry it off, so that it disappears altogether, and the parts which were formerly invaded by it resume their natural tone.

Dislodged.

and carried  
off.

Compara-  
son.

Blisters, mustard poultices, and stimulating liniments act in the same manner, but in a far less degree. Being applied externally only, although their use is attended so often by excellent results, yet they are of no avail in stubborn cases. But the stimulating Pyonex oil passes through the artificial pores, into the soft tissues, and is carried by the circulation into their midst, keeping up its vitalising action for three days, instead of only a few hours, and in this way enables the system to carry out its own process of elimination on such a scale as can be attained by no other means.

The quantity of pus which is expelled at the commencement of the treatment of a disease is usually much in excess of that which follows. It sometimes comes out in extraordinary abundance; the thirty-three pores which are made by one puncture of the instrument may remain distinct and produce thirty-three well-filled pustules, or they may all run together and become confluent and form one bag, or in rare cases the integument which is included in the application may be so undermined by pus that it is raised up in its whole extent, making it impossible to discover either the marks of the instrument or the smallest point that is free from pus. Thirty drops, or a half of a drachm, of pus may be taken as a good discharge for an application; the average discharge is less than this.

Quantity of discharge.

Confluent.

Covered.

As the applications are continued, the discharge becomes less and less, until at last it is not possible to produce a single pustule. In cases of paralysis, however, notwithstanding this fact, it is necessary to continue the applications, the object being to excite the tissues to a healthy growth and vitality. Notwithstanding that the spinal column is the part to which special attention is directed in these cases, the individual treatment of the limbs which are affected, is necessary in order to obtain more satisfactory results, as they are usually charged with offending elements.

Treatment without discharge.

### INCREASED VITALITY.

The increased vitality communicated to a part by repeated applications of the Pyonex Treatment is evidenced in several ways, among which are the following :—

Vascular  
system.

*Vascularity.*—The increase of activity in the vascular system is marked, the arteries and veins which for weeks or years have been shrunk and withered, rapidly increase in calibre, and the resulting new supply of blood to the part similarly affects the cellular tissue, nervous peripheræ and capillaries.

Healing  
power.

*Healing Power.*—The healing power of the whole system, and especially the parts contiguous to the application, is improved. Discharging sores and wounds of long standing begin to show a healthier appearance, and end by closing up. In a case, for

Sphincter.

example, of fissure of the sphincter which had been discharging for years, it healed in a few weeks, the

Curvature.

cure being permanent. In cases of curvature of the spine which are not due to malformation, the muscles increase in volume and tone, and the result of their increased tonicity is to pull the column into a straight line; the abnormal curves disappear, and every vertebra resumes its natural position.

Sensation  
and motor  
power.

Increase of *sensation* and *motor power* usually supervene in a short time when the treatment is given in cases of Paralysis and Locomotor Ataxia. The quantity of purulent matter which is expelled in the latter disease is at times beyond anything that one would believe possible; this is after the first two or three applications, after which there is a marked diminution in quantity.

### GENERAL DIRECTIONS RELATING TO THE APPLICATION OF THE INSTRUMENT, OIL, &c.

#### APPLICATION OF THE PYONEX.

It should be borne in mind that the instrument when properly applied causes no pain.

The top cap is unscrewed and taken off in order to

make the perforations. The second cap has to be removed only for the purpose of cleaning and polishing the needles.

The instrument should be held in the left hand and the little handle should be pulled out about an inch, more or less, with the right hand, and be allowed to fly back, the open end of the instrument being applied to the part to be treated. The needles on flying back give a slight tap to the cuticle and perforate the epidermis. The tap is distinctly felt, but does not hurt.

The Pyonex instrument is held at right angles or perpendicular to the part being treated. If held otherwise, *i.e.*, at an acute or obtuse angle, some of the needles will not touch the skin, while others will enter too deeply, to the discomfort of the patient. The object is to pull the handle so as to give a gentle tap that will perforate the epidermis only. Position.

A firm, but not heavy, pressure is laid on the instrument with the left hand, by which means the circle of integument which it encloses is somewhat stretched. The needles thereby effect their perforations more easily and by a more gentle blow. Pressure.

It is the custom to give one blow only, of sufficient force to effect the perforation, but it is preferable to give two or three gentle blows. The perforations are then more perfect, and the blows are barely perceptible to the patient. It suffices to pull the handle out about a half of an inch, in case the spring is strong. Two or three blows preferable.

It will generally be sufficient to leave a space of from two and a half to three inches between the perforations. Spaces.

- Chest treatment.** On the chest of an adult three lines of perforations may be made on each side of the sternum, or central line of the chest.
- The instrument should not be applied to a joint, in the bend of a joint, nor over bone covered only by the skin. The soft parts are always selected.
- Stubborn cases.** In stubborn cases the needles are made to pierce a little deeper by increasing the force of the blow. The perforations are also made in greater proximity to each other, the spaces being  $1\frac{1}{2}$  or 2 inches.
- Fingers, Wrists, Toes, Feet, Hands.** In affections of the fingers and wrists, the arm and forearm are treated. If the toes, feet, or ankles are affected, the thigh and leg are treated.
- The back of the fingers and hands, as also the upper surface and sides of the feet, may be treated in certain cases ; but, in such instances, care is taken to apply the needles gently. A good discharge results ; the pustules, though small, being well formed.
- Elbow.** For inflammation, or other affections of the elbow joint, the same line of treatment is adopted as for the fingers and wrists.
- Face.** In cases of eczema of the face, and headache, the perforations should cover the back of the neck, beginning at the roots of the hair and extending all the way down, on each side of the spine. Also the whole of the back and chest should be treated.
- Shoulder.** In affections of the shoulder joint the treatment is applied to the whole of the shoulder, back and chest, also the arm as far as the elbow.
- Knee.** If the knee-joint be affected, the whole of the thigh and calf is treated.
- Hip.** In affections of the hip-joint the outer part of the joint which is nearest to the surface is thickly covered



with perforations. The back and thigh are also treated.

In affections of the liver, kidneys, and other internal organs, the abdomen, chest and back are treated; beginning with the abdomen, and treating the chest and back in turn. Liver,  
Kidneys,  
&c.

It should be borne in mind that an application covering only a small space is not likely to prove very effectual, as, in such cases, only a small quantity of morbid matter can be expelled from the system.

A good rule to observe is, in all cases where practicable, to treat the whole of the chest, back and abdomen in turn. By this means the largest possible expulsion of matter is ensured, and a corresponding benefit may be effected. Always commence with a small treatment. Treat parts  
in turn.

#### THE APPLICATION OF THE OIL.

The oil, which is composed of Lytta, Euphorbium and Oleum Amygdalarum Dulce, is applied immediately after the perforations are made. Too large a surface should not be perforated at a time; as the oozing of a little serum or blood is liable to block up the artificial pores and prevent the entrance of the oil. From fifteen to twenty perforations may be made, and after these are well anointed, fifteen or twenty more may be made and anointed; and so on until the treatment is completed. The oil.  
  
Perfora-  
tions.

The brush should be a moderately stiff one; a soft one is not suitable. It must be applied with some pressure, and be passed over the ground repeatedly, until the oil is well worked in through the pores. The brush.

Most of the oil which is applied with the first Absorption  
of oil.

strokes of the brush is rapidly absorbed. More oil should be applied until the surface is well covered. The oil may be used from a wine-glass or egg-cup, or it may be poured on the brush ; but the brush should not be dipped in the bottle, as it fouls the oil.

#### THE COTTON WOOL.

The cotton  
wool.

Cotton wool, which is glazed on one side only, is the more convenient kind for use ; but if it be glazed on both sides, one of the glazed surfaces is removed, care being taken not to remove the wool.

A piece large enough to cover the whole of the part treated is cut out with the scissors and placed in position. It is secured in its place by means of short pieces of adhesive rubber plaster (this plaster is sold in metal reels, containing ten yards) of an inch in width, which is the most convenient size. For a treatment on the back or chest, one strip of plaster about four inches in length, at each corner, and one strip at each side will be sufficient to keep the cotton-wool in position. Cotton wool which is backed by muslin is preferable.

Vest.

A close-fitting undervest should always be worn with the treatment, and not be removed at night ; so as to protect the cotton-wool and keep it in place. The glazed back should be on the outside, the main object being to prevent the absorption of the oil. The patient is warned to press on it as little as possible.

Time.

*Time.*—The cotton-wool is allowed to remain undisturbed for forty-eight hours ; then it is removed. A certain quantity of dry pus will be seen adhering to its inner surface. The whole surface treated is wiped

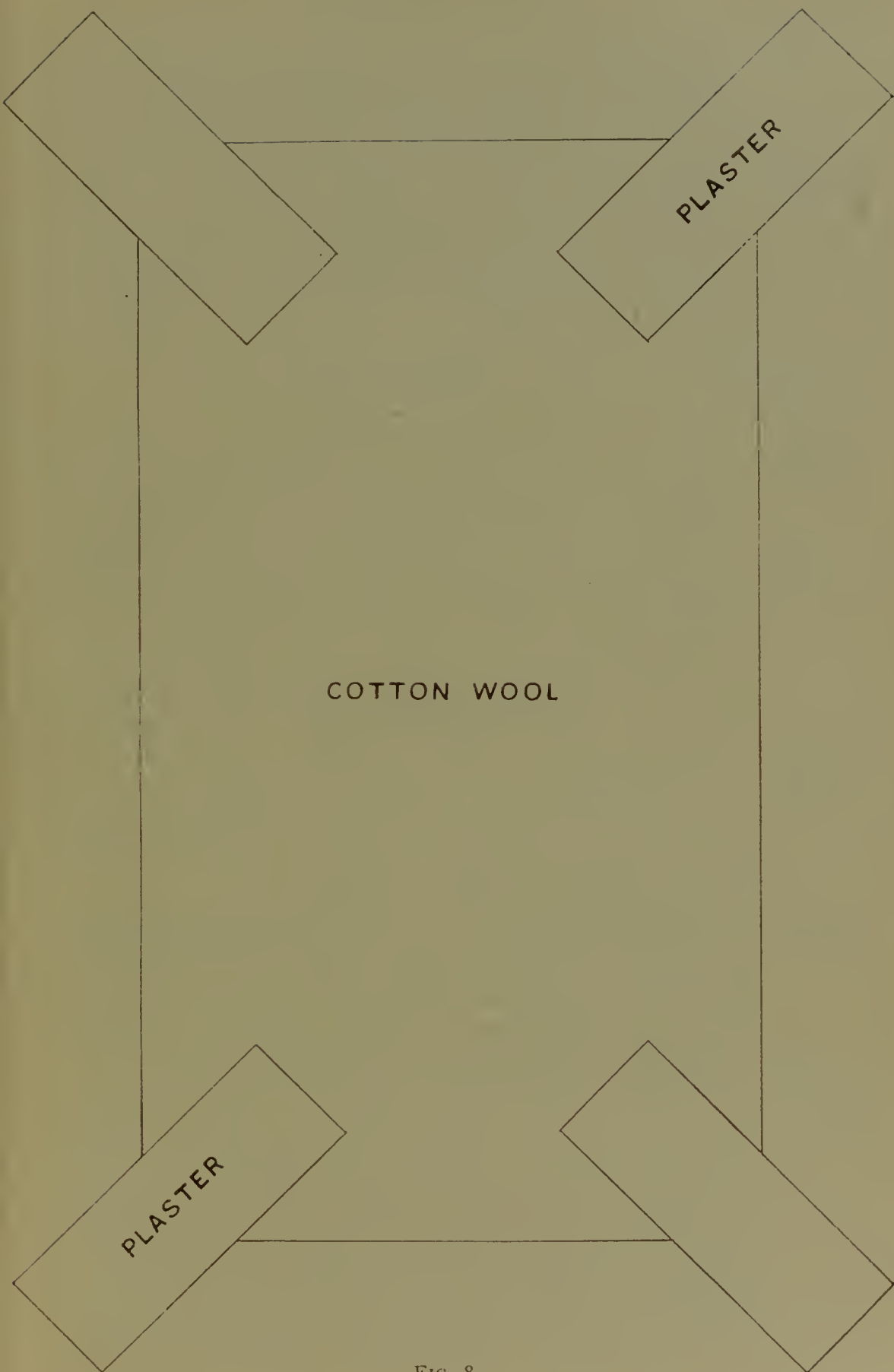


FIG. 8.

with a soft sponge moistened with warm water, without soap. Large pustules are pierced and expressed.

Second  
cotton  
wool.

A fresh piece of cotton wool is then applied. Four pieces of adhesive plaster will suffice to keep it in position. This is allowed to remain as long as the patient realises any comfort from it. Three or four days usually suffice.

### SECOND CROP.

Second  
crop from  
deeper  
tissues.

When there is a large quantity of matter in the system, a second crop of pustules usually makes its appearance after the application of the second piece of cotton wool. These are of large size and full of thick pus. If they are punctured and expressed they disappear.

Pustules  
everywhere.

The second crop works its way up from the deeper layers of tissues, usually in four or five days. It frequently occurs that the pustules appear, not only at the perforations of the instrument, but that the whole of the integument in the spaces between them is also thickly covered.

Confluent  
pustules.

The pustules at the perforations made by the instrument at times become so charged with matter that they flow together and form one common bag or sac. This confluence is consequent on there being an unusually large quantity of matter in the system.

Cotton  
wool.

In some rare cases, notwithstanding the fact that reasonable care is taken by the patient to protect the treatment from undue pressure, and thus disturbing its action, owing to the restless nature of the patient, the whole treatment is made void within a few hours, the cotton wool is torn into holes and the oil is rubbed off. It is necessary in such cases to first cover the part

treated with gutta-percha tissue in the manner described Tissue. for making an application more effective. It is also advisable in some cases to strengthen the cotton wool by stitching to it a piece of muslin or other thin material so as to prevent it becoming torn. Gamgee cotton (the excess of cotton being removed) answers the purpose.

If a treatment has been rubbed in any part it may When the treatment is rubbed. be discovered by examination. The perforations present flat red marks instead of well-formed pustules. The beneficial result in such cases is little or nothing.

The sock or stocking, which is worn over a treatment on the foot or leg, should not be removed until Sock not to be removed. the treatment matures. When patients neglect these instructions comparatively little benefit results from the application.

#### IRRITATION.

The irritation resulting from the application of a blister is most trying to the patient, but in the case Irritation, and how to avoid it. of the Pyonex Treatment, if proper precautions are taken, it is altogether absent, or it is so little as scarcely to be noticed. A clean cut or scratch heals up without irritating, and the same rule holds good in the healing of the pores made by the treatment. If the pus which is discharged be thoroughly removed by Removal of the pus. a sponge there is no discomfort experienced; but when the discharge, which is usually of a poisonous character, is allowed to dry on the exposed nervous peripheræ, there is sure to be more or less irritation. It is preferable for the medical attendant to remove this at the maturity of the first application, so that the patient may learn how to do it. Subsequent ablu-



tions may, if desirable, be left to the supervision of the patient.

Fresh  
cotton.

A fresh piece of cotton wool is always applied after the treatment has been cleaned off, and the patient is then quite comfortable. If the cotton from any cause be giving discomfort it may be changed earlier.

#### REPEATING THE APPLICATION.

Repeti-  
tions.  
Ten days.

In some cases the expulsion of the pus is accomplished in two days, and the skin resumes its natural state on the fourth or fifth day after the application, so that a second application may be made forthwith. But, as a rule, about ten days are required in order that the skin may sufficiently recover to admit of a second application.

When applying the instrument the second time, it is placed on the sound integument, between the marks left on the first application.

#### CLEANING THE INSTRUMENT.

The  
needles.

Mode of  
cleaning.

The thirty-three needles which make the perforations are liable to become rusty and unfit for use if not kept in good order. After the instrument is used they should be cleaned and polished and replaced in the case like new. The best way to effect this, after removing the second cap, is to hold the instrument with the second, third and fourth fingers in the left hand. The index finger and thumb are then available to revolve the needles, whilst the right hand makes rapid passes over their points with the little roll provided for the purpose. The roll should be

moistened with Eucalyptus Oil and be dried after Antiseptic being used.

On placing an instrument on the table or other place during an application, care should be taken that it is so placed that it will not roll. If it fall, the needles will strike the floor first and break. Instruments are often spoiled in this way.

#### AFTER THE TREATMENT.

On the conclusion of the application the oil remaining on the brush should be expressed with a fragment of cotton wool, and the brush be returned to its place. It may afterwards be washed with carbolic soap and be well dried before being put away. By this means it will retain its required stiffness. The bottle of oil should be recorked as soon as used and the cup be cleansed.

Cleaning  
the brush.

The oil  
and cup.

After these items are finished, and not before, the hands should be washed so as to remove the least vestige of oil that may cling to them. It has often happened from lack of care in these seemingly trivial details, that the oily finger has inadvertently been brought in contact with the eye and produced a sharp inflammation.

The hands.

#### MEDICINE AND DIET.

As the object of the Pyonex Treatment, is to expel morbid elements from the system; the diet for a week or two after its application, should be of the most generous kind. The circulation should be kept as full and bounding as possible. Stimulants, such as wines and spirits, are helpful, and, in cases of

Generous  
diet.

Stimulants.

debility, are necessary. Good Dublin stout is preferable to ale or beer, and acid fruits must be avoided.

In case of debility.

The action of the heart is somewhat accelerated, for two or three days after the application, and if there be any manifestations of weakness, small doses of brandy or whisky, or a dessert-spoonful of rum in combination with a wineglass of milk, should be given frequently. This precaution will be necessary only if the patient is in a weak state.

Rich diet.

Roast beef, mutton chops and tender steaks; roast mutton and rich puddings and custards, are among the articles that tend most to keep up the strength and fortify the system for the expulsion of impurities.

### TONICS.

In anæmia.

In the case of anæmic conditions of the system, suitable tonics will tend to brace up the relaxed tissues, and impart strength. Amongst the most effective of these, will be found F. E. Serenoæ Serrulatae, Iron, Quinine, Strychnia or Nux Vomica, Gentian, Quassia, Calumba, &c. When these are combined with Tincture of Orange, Extract of Liquorice Syrup and Simple Elixir they are made quite palatable, and the patient will then be more likely to take the tonic regularly.

Combinations.

### QUESTIONS AND ANSWERS.

Among the questions which are commonly asked by patients are the following:—

Diet.

(1) Must I observe any special diet?

No change in this respect is necessary. The diet cannot be too generous. Wines and spirits, if taken

in moderation, tend to help the treatment rather than otherwise, acids are avoided.

(2) Is it necessary for me to keep indoors?

Exercise.

No. Exercise, such as warms the body, is decidedly advantageous, and should be taken when possible. It should not be carried to the point of weariness.

(3) Is there any harm in getting wet or cold?

Yes. Both are detrimental. If the body gets cold during the treatment, no particular harm happens to the patient. But the beneficial effect of the treatment is liable to be destroyed.

The body should be kept as warm as possible for two days, while the treatment is progressing. By observing this as an invariable rule, a larger amount of purulent matter will be eliminated from the system. If a person sits for hours in a cold room, the treatment during such time is checked and will not resume its action until the system is again quite warm.

The body  
to be kept  
warm.

Effect of  
cold.

(4) Can I follow my occupation as usual?

Occupation.

Yes. As a rule not an hour need be lost. But there are exceptions to every rule, and if the quantity of matter coming from the system be exceptionally large, a certain amount of symptomatic fever accompanies the flow, and the patient does not feel equal to work. But after the matter is out, he rallies quickly and is full of life and vigour.

(5) Does the treatment leave any permanent marks on the skin.

Marks on  
the skin.

Every mark disappears *in toto*. If they delay somewhat, the reason is because there is still much

matter in the system that should be expelled, and further treatment is advisable.

The expelled pus.

(6) Does not the matter which is expelled, re-enter the system ?

If this were to take place, no beneficial results would accrue. It never returns to the body. It is partly absorbed by the cotton wool and partly removed by the sponge on the third day. The remainder dries up and falls off.

Use of cotton wool.

(7) What is the use of the cotton wool ?

Without this, the treatment would be ineffective. In the first place it prevents the absorption of the oil by the under-garments. Secondly, it keeps the part warm.

Time for wearing the cotton wool.

(8) How long must the cotton wool be worn ?

In all cases two days, or forty-eight hours. It should then be removed, and the part cleansed with a soft sponge and warm water, without soap. Fresh cotton wool should then be substituted, and worn as long as it communicates comfort.

No soap.

Changing the wool.

Should the cotton wool which is first applied become matted or caked by accident, there is no objection to its being changed at once. It is, in fact, advisable to do so. After the second day, if the part be red or inflamed, it should be bathed with warm water and have a change of cotton wool. This operation always results in great comfort.

Bathing the part.

Removing the pus.

(9) Should the larger pustules be punctured and their matter be removed ?

Whether it be removed or not, is purely a matter of choice. Its removal or otherwise has no perceptible effect on the treatment. If not removed, as



already stated, it rapidly dries up and disappears ; but there may be irritation.

(10) Will not the treatment produce pustules in any one, whether he be well or ill ?

The production of pustules.

No. If a person be in perfect health and his system be free from impurity, and the treatment be applied over his chest and back, *not a single pustule will result.*

(11) Will the treatment continue to expel matter from a person not in good health ?

The quantity of matter expelled is less at each successive treatment, and finally not a vestige appears.

(12) Is any benefit received from the treatment if no pus be expelled by it ?

Benefits when no pus is expelled.

If no pus be expelled, and the part treated does not become red or swollen, this is as a rule an indication for the cessation of the treatment, it being certain that the system is in a pure state.

But there are exceptions to this rule.

Exceptions.

(1) If it be required simply to produce an alterative effect in the system, when a patient complains of restlessness and inability to apply himself to his usual occupations, without there being any apparent cause, an application of the treatment will recuperate him, even if there be no expulsion of purulent matter.

As an alterative.

(2) In treating cases of paralysis, a continuation of the benefit is experienced after the cessation of purulent discharge. The benefit in this case, is due to the stimulating effect of the oil. After entering the system through the artificial pores, it combines with the blood circulating in the affected part. By thus increasing the force of the circulation, it increases the healing power, so that parts which were in a

In paralysis.

dormant state, are thereby restored to life and activity.

#### EXTENT OF SURFACE TO BE COVERED BY TREATMENT.

Depends  
on circum-  
stances.

Increase of  
pulse.

Reproduc-  
tion of  
symptoms.

Good sign.

Remained  
in bed.

This point is naturally an important one. No rule can be laid down, but we must be guided by circumstances. The expulsion of pus always involves an effort on the part of the system, and there is frequently redness of the skin accompanied by increased rapidity of the pulse from five to ten pulsations a minute, according to the amount of treatment given ; while in rare cases, where the quantity of pus expelled is large, the patient may, for a day or more, experience a reproduction of many symptoms which were characteristic of the affection from which he formerly suffered. These symptoms are stirred up by the treatment, and continue while the impurity or exciting cause is finding its way to the surface. As soon as the pustules are mature they disappear. When such symptoms are somewhat severe it may be taken as an excellent sign, there being no doubt that the treatment will produce a beneficial result. While in other cases where there is no redness of the skin nor the smallest constitutional disturbance, not only is the quality of the discharge less poisonous, but the resulting benefit is less marked and a longer interval is required for it to become apparent.

In over two thousand applications the author cannot remember more than three cases where the patient remained in bed for a day or two in consequence of the constitutional disturbance caused by the treatment.

When the patient is in fair health and the treat-

ment is intended only to counteract general indisposition, cure a severe cold, or act as a powerful alterative, there is no objection to giving what is usually termed a double application, that is, on the back and chest. But supposing the strength of the patient to be greatly reduced, the better plan is to begin with a test treatment on one side of the chest of only four or five punctures, which will cover a space as large as the palm of the hand. From this the tolerance of the patient can be calculated. In one instance the patient was so reduced from severe asthma and dyspepsia, that only four or five punctures could be tolerated for the first eight or ten applications. But as the severer symptoms disappeared and strength returned, the surface covered by the treatment was gradually increased until the whole of the chest could be treated without inconvenience.

Double application.

Test application.

A case.

Usually there is no inconvenience felt from a treatment on the whole of the chest and abdomen. When females are thus treated the under-garments should be suspended from the shoulders for two days to prevent the oil being rubbed off. After four or more days another application may be made to the back. This plan is preferable, as regards the comfort of the patient, to giving the double treatment.

Ordinary application.

In cases where there is some doubt as to what is the cause of a general lack of tone in the system, or listlessness and want of interest in everyday affairs, when tonics produce but a transient effect and change of air but a small benefit, a test application of five punctures on the chest will often solve the mystery. If pus be discharged the indication is to clear the system of the impurity by as many applica-

Diagnosis doubtful.

Test.

Clear the system.

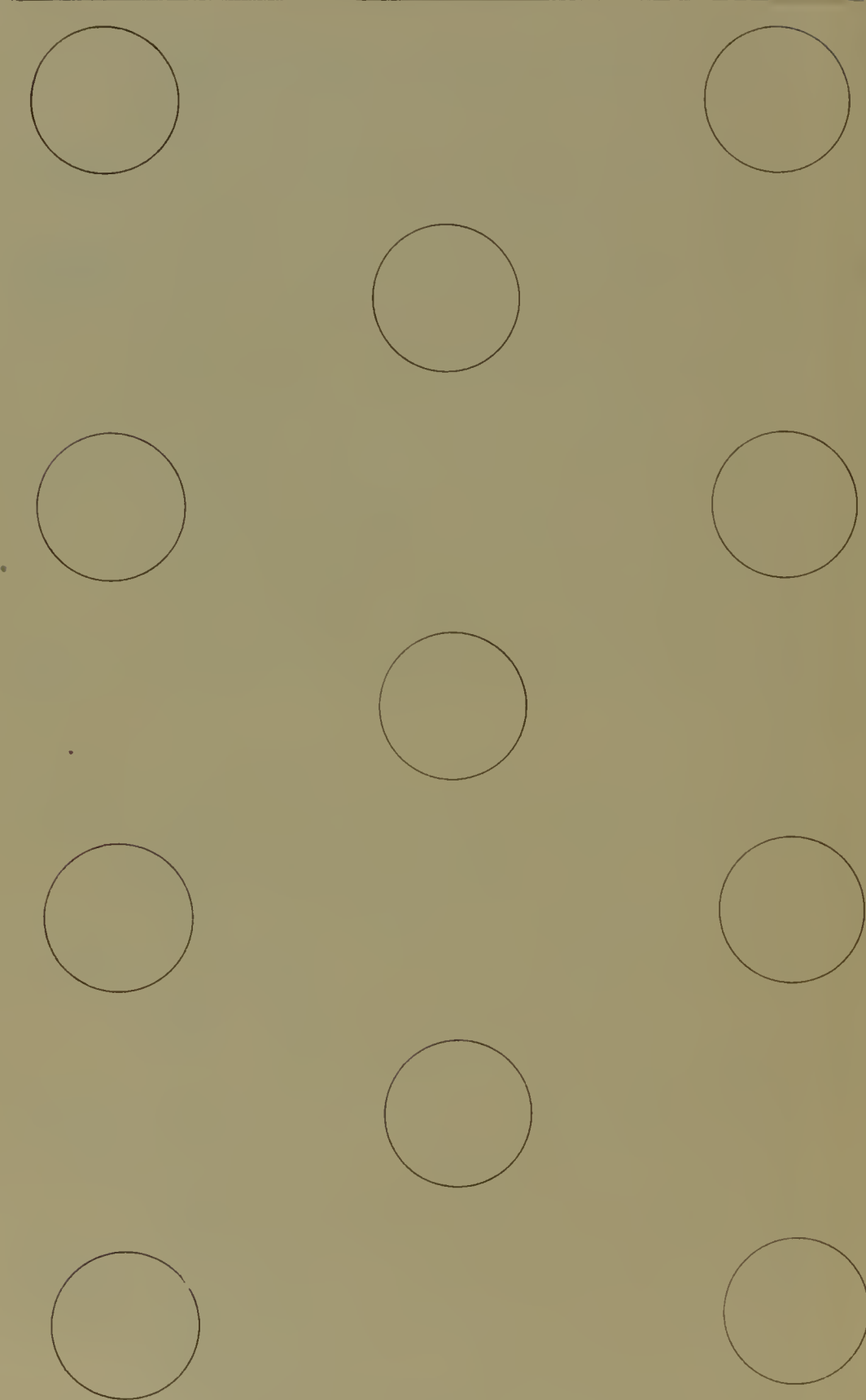


FIG. 9.  
PERFORATIONS—ORDINARY APPLICATION.

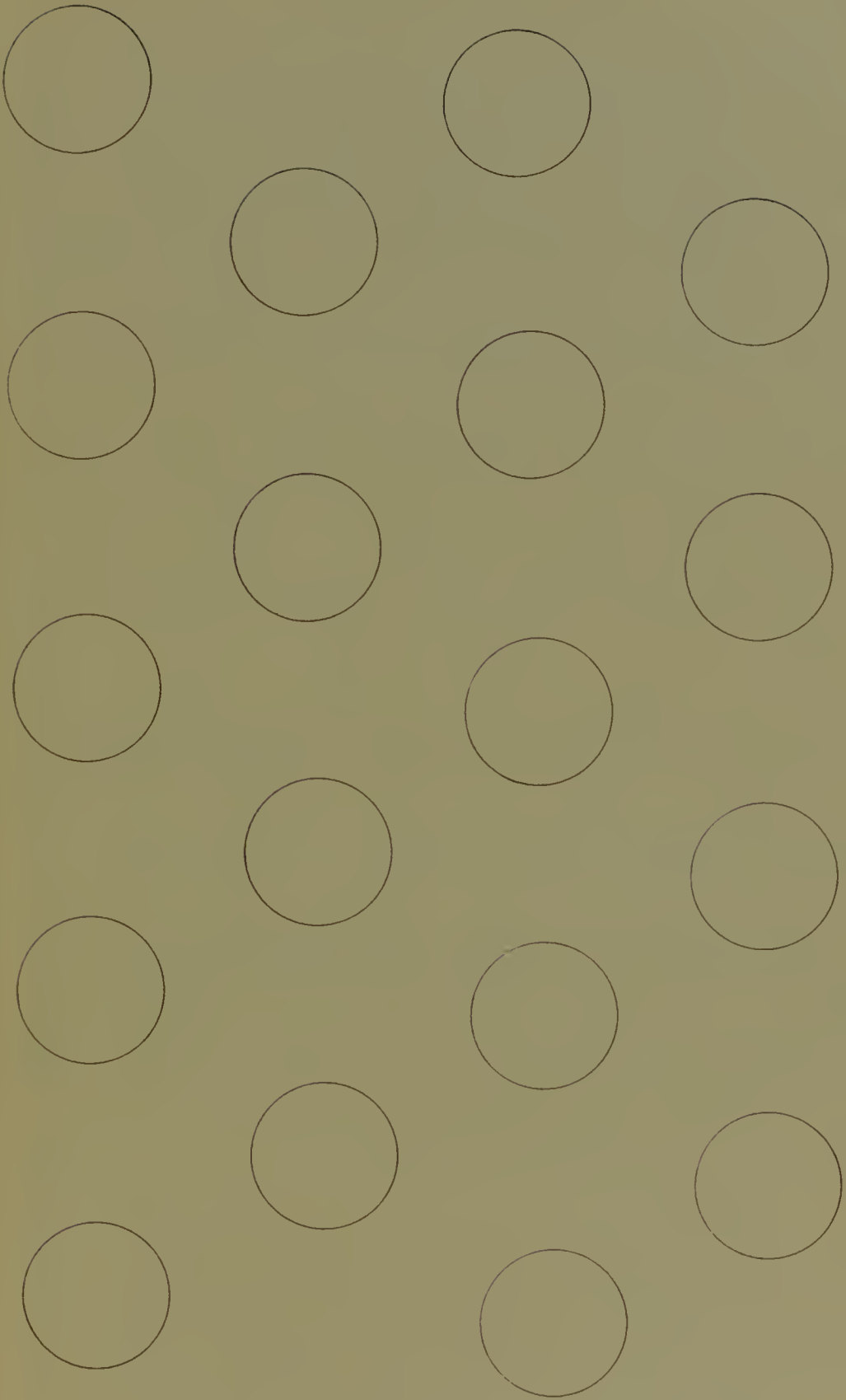


FIG. 10.  
PERFORATIONS—CLOSE APPLICATION.



tions as necessary. Three will nearly always suffice for the patient to express entire satisfaction. But in case of there being a fair discharge from the third application, the treatment should be continued until the whole of the pus is cleared out. When a case is thus treated, the result is such an improvement in the powers of endurance, tone and elasticity that the patient enjoys a second youth.

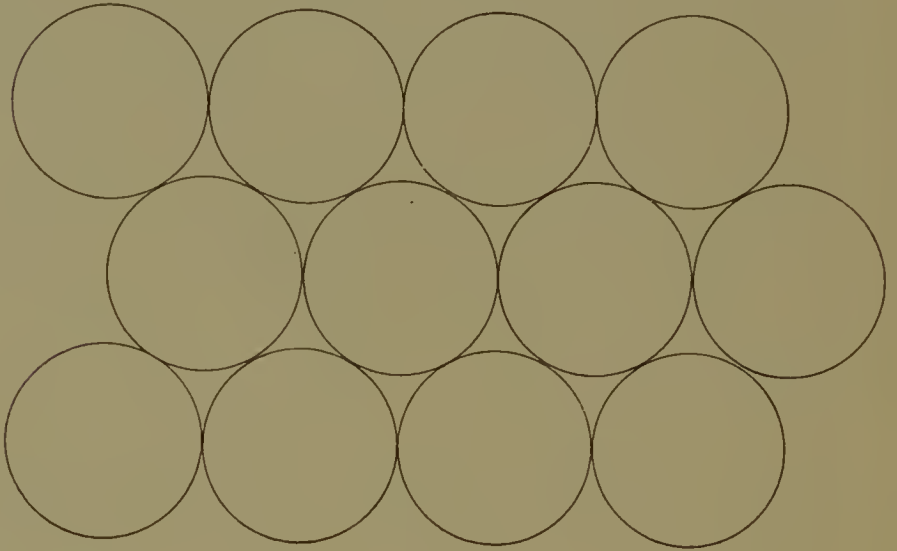


FIG. 11.  
CONTACT APPLICATION.

Second  
application.

A second application should not be given while any inconvenience is being felt from the first. Sufficient time should always be allowed for recovery.

Punctures.

The proximity of the punctures to each other must be regulated accordingly as it is desired to produce a strong or mild counter-irritation or expulsive action. The distance, as shown on Fig. 9. will suffice for ordinary cases, twelve or fifteen perforations on each side of the chest being a fair application. But when it is required to remove pain and swelling from the metatarsal or metacarpal bones, or from the tarsus or

carpus, such as is often met with in rheumatoid arthritis, or when any joints will not yield to ordinary applications, as frequently happens in chronic rheumatism, it is necessary to increase the proximity of the applications up to such a point as will make the disease

Tarsus and  
carpus.

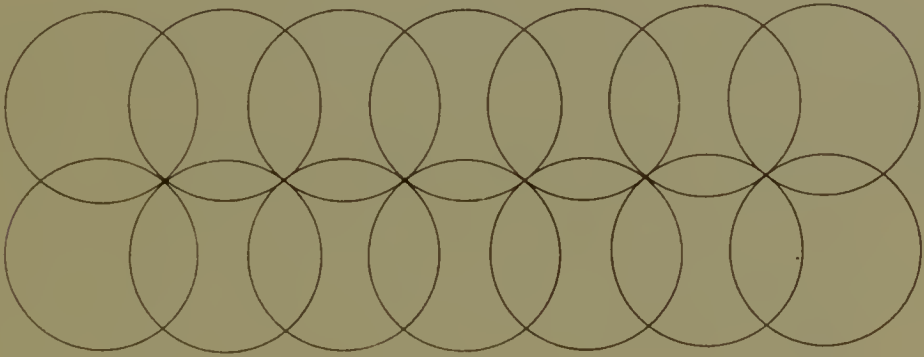


FIG. 12.  
OVERLAP APPLICATION.

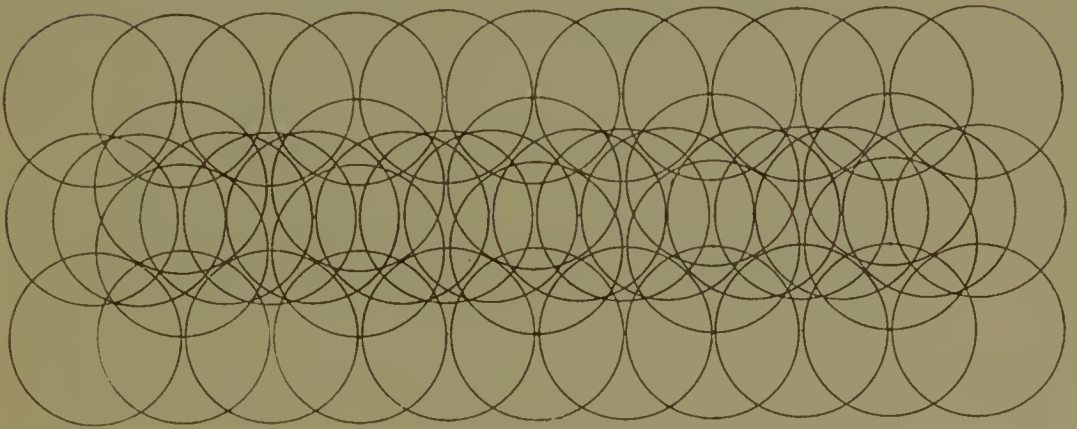


FIG. 13.  
DOUBLE OVERLAP APPLICATION.

yield. This may be carried to any extent according to the nature of the case. The punctures may be more numerous, as in fig. 10, or come in contact with each other, as in fig. 11, or may overlap, as in fig. 12; or the same part may be covered and re-covered, as in fig. 13, until the skin is literally covered with artificial

Over-  
lapping.

Effects. pores ; the larger the number of pores the greater the effect. These overlapping applications are not attended by any disagreeable effects to the patient. As the discharge is small, when this kind of treatment is necessary, the disturbing effect is not noticed.

#### EXCEPTIONAL CASES.

Improvement maintained in stubborn cases. From lack of knowledge how to deal with stubborn cases, it has frequently been considered that they could not be treated successfully. But where there is due perseverance, and a properly graduated increase of the expulsive action and counter-irritant effect is kept up, it will be discovered that there is a constant improvement.

Chronic cases. In almost all chronic diseases which are amenable to the Pyonex Treatment, the first few applications will greatly ameliorate the general condition of the patient. Pain, which is always the most distressing symptom, is alleviated ; also the extreme depression,

Depression. caused by the sense of a burden, which weighs down the spirits and makes it appear more desirable to die than to live, is removed ; the countenance brightens, cheerfulness returns, accompanied by a new interest in the affairs of life. This improvement is due to the rapid expulsion from the system of a noxious and toxic element which handicapped the brain, nerves, and viscera. When this point of amelioration is reached, we are able to devote ourselves more particularly to the individual parts which need attention.

Cause of improvement. The mode of treatment of these parts must depend on the results of each application. If the improvement is satisfactory, while the usual space is left between the punctures, the indication is to continue the same

Mode of Treatment.

method of action ; but if the improvement is too slow, we make more artificial pores, and increase the force of the taps so as to make the needles go a little further into the epidermis. We go on increasing the number of perforations until we find that the progress of the case is satisfactory. Stubborn cases, where the joints are swollen owing to chronic rheumatism, rheumatoid arthritis and gout, make very slow progress if not treated in this way. *Increased activity* in the treatment is also obtained by well warming the oil previous to application. By doing this it becomes more fluid, and a larger percentage enters the system through the artificial pores. Another plan for making the treatment more active is to cover the parts with gutta percha tissue previous to applying the cotton wool. This is specially requisite when treating the feet for rheumatic affections, and any other part that is likely to have undue pressure or be rubbed.

Stubborn cases.

Heating the oil.

Gutta percha tissue.

Temperature.

Increase of the temperature of the atmosphere also increases the activity of the treatment. As already stated, a cold room may completely stop the expulsive action, whilst a warm room increases it. There is also a marked difference in the activity in summer and winter. Long walks in the sun at times make the treatment so active as to somewhat distress the patient, while in winter it is often necessary to apply extra layers of cotton wool in order to keep up the action. During hot weather the activity may, if necessary, be moderated by diluting the oil 25 or 30 per cent. with Ol. Amydg. Dulc.

Dilute oil.

#### THE APPLICATION.

When an application is made to the upper or lower extremities, the cotton wool should be kept

Bandaging.

Swelling.

in its place by means of bandages. It frequently happens that the limb becomes swollen, owing to the expulsion of the exciting cause, which does not all find its way to the perforations of the instrument, but invades the softer tissues, and makes them tumid. This fact must be borne in mind while applying the bandages. They should be put on sufficiently loose to allow for the swelling, and the patient should be instructed to ease them still further if necessary. If this be not attended to, the patient may experience discomfort and the application be less effective.

Open sleeves.

In the case of applying the treatment to those suffering from rheumatoid arthritis, gout, rheumatism, eczema and other diseases, in which many applications have to be made to the upper and lower extremities, it is preferable to dispense with bandages, and substitute sleeves and leggings, which are slit up from top to bottom, and retained in their places by pieces of tape, of three or four inches in length, placed at distances of two or three inches from each other. These are a more comfortable arrangement for the patient, and not so liable to slip down as a bandage. They can also be removed and replaced in less time.

Cases for gutta percha tissue.

In exceptional cases the matter which is expelled is of a very adhesive nature ; it also comes out within twelve or eighteen hours after the application is made. The pus filaments of the cotton wool immediately become gummed to the artificial pores and block them. The further expulsion of impurity thereby ceases.

Restless sleepers.

In other cases, the patient leans too much weight on the back, or is a restless sleeper, and succeeds



within a few hours in rubbing off the oil, so that the application produces scarcely any result.

In a third variety of cases, owing to the low vitality of the patient, a sufficient quantity of oil to excite an expulsive action is not absorbed. A little pus is discharged, which is as nothing to what there is reason to expect.

In such cases it is advisable to use gutta percha tissue under the cotton wool. The blocking of the artificial pores is thereby avoided, and the expulsion of pus is induced. The absorption of the oil is prevented, notwithstanding any pressure which may be brought to bear on the parts treated. A sufficient quantity of oil remains in contact with the skin to keep up a gentle counter-irritation and thereby favour the expulsive action.

When the circulation is weak and the surface of the skin is cooler than natural, it is a good plan to place a double layer of cotton wool over the tissue. This helps the expulsive action and conduces to the comfort of the patient.

#### MASSAGE.

The reason why the circulation of the blood is so torpid in persons who have passed middle age, is commonly owing to inactivity of the body. There are thousands who remain seated during the greater part of the day; they have no occupation, and take little exercise.

As a natural consequence, the capillaries through which the blood circulates become so choked and matted that the natural quick flow of the blood is checked. A sensation of cold is gradually experienced

in certain parts, and if it happens to be a joint, a rheumatic pain may be complained of.

Effect of  
massage.

If these parts be vigorously rubbed and kneaded with the palm of the hand, the semi-adhesions that are caused may be broken down, the matted and choked capillaries cleared, and the circulation restored to its former vigour.

Massage  
before  
applying  
the Pyonex.

It is advantageous to make it a rule to massage the back, chest or extremities before applying the Pyonex. By this means a better result is obtained. The oil is carried deeper into the tissues, and, the circulation being more vigorous, there is more power in the system to expel the morbid elements.

Pyonex  
outfit.

The outfit for applying the treatment consists of: (1) The Pyonex Instrument; (2) brush; (3) pair of scissors; (4) bottle of Pyonex oil; (5) cotton wool; (6) oil cup; (7) adhesive plaster; (8) cleaner; (9) dusting powder; (10) sponge.

#### THE COMBINATION OF MEDICINAL AND PYONEX TREATMENTS.

In almost all cases which demand the Pyonex treatment, it is necessary to combine the administration of suitable medicines.

In many classes of ailments, the medicinal treatment has to take a prominent part, and is of the highest importance. The Pyonex at such times comes to the aid of the therapeutic action of our drugs, by preparing the system for them, and enabling them to produce their expected effects. It removes the obstructions and barriers, and the remedies forthwith work without hindrance.

In another class of affections, the offices of the

two are somewhat reversed. After every remedy has been tried and the disease proves to be of such a nature that it resists the most active medicinal treatment that can be applied; then by the aid of the Pyonex, we are able to produce changes that soon turn the scale. The most difficult and distressing features of the case are overcome, and the system is again brought into a condition which is suitable for the administration of such medicines as the case calls for. We can prescribe freely and are not disappointed. The medicinal and the Pyonex Treatments work excellently together, and in all serious cases the calls on the chemist are constant, in fact, they are often more frequent than where the Pyonex Treatment is not used. This is owing to the fact that the changes produced in the state of the patient, and progress of the ailment, are more marked and rapid than in cases where medicine alone is used, thus demanding a more frequent change of medicine.

In the present work it has not been considered necessary to set out the medicinal treatment that has been adopted in dealing with most of the cases described. With the exception of three or four, there appears to be no reason for such a course. Every practitioner has his own method, and will endeavour to produce his desired effects by his own plan of treatment. In the exceptional cases where the medicines that were given are mentioned in detail, it has not been with the idea of suggesting a line of action that might prove effectual in general cases of the kind of ailment; but the object has been to present to the reader the whole treatment that was followed, so that any one may be enabled to judge for himself as to how far the

improvements which are reported as having taken place have been due to the therapeutic effects of the medicinal agents that were employed, and how far to the depurative effects of the Pyonex Treatment.

#### DISEASES IN WHICH THE PYONEX TREATMENT IS CONTRA-INDICATED.

When the treatment is indicated.

The general indication which serves as our guide as to the utility of the Pyonex Treatment in particular diseases, is the fact whether the affection which we have to treat be due in whole or in part to purulent infiltration.

When we are satisfied that puriform elements in the blood or tissues constitute the exciting cause, we have good reason to expect beneficial results from the application of the Pyonex. But although there are various affections of minor importance in which, though no discharge be produced by the application of the Pyonex, we notwithstanding get excellent results; there are also other affections in which the treatment is distinctly contra-indicated.

Phlebitis.

In phlebitis and other affections of the veins, the application of the Pyonex tends to increase the inflammation, if applied in proximity to them. There is, however, no objection to an application being made in other parts of the body, where the veins are sound.

If there be morbid matter in the system, the patient may reap decided benefit from the treatment. Inflammation may be rapidly dispersed, owing to revulsion and depletion, and the swollen veins may diminish in calibre.

In heart affections.

In heart affections the treatment has to be used with special precaution. We have alluded to the fact

that the effect of a general application is to increase the number of the heart's pulsations, about five or ten per minute ; whereas our object in treating affections of the heart is to keep the patient free from excitement. Anything approaching to an extensive application might therefore add to the severity of the symptoms. But small applications are safe, and may result in marked benefit, in rheumatic and other affections which involve heart symptoms.

In all such cases, the pure or impure state of the system may be ascertained by making a test treatment of three or four perforations only, on one side of the chest. If pus be expelled, the indication is that the system needs an outlet ; and the requisite number of perforations should then be made over the abdomen, chest and back. Eight or ten punctures each time may suffice for the purpose, made at intervals of four or five days. The system will thereby gradually be cleared of its purulent products, while the stimulating effect on the circulation will be too slight to cause inconvenience.

Test application.

In cases where there is extreme weakness of the system, and it may be deemed expedient to make an application of the Pyonex, a small test application of three or four perforations is first made, in order to ascertain the tolerance of the patient. If no inconvenience is felt, the size of the space covered by the instrument is then cautiously increased, always having regard to the strength and condition of the pulse.

In extreme weakness.

It is observed as a general rule not to make the perforations over joints, such as the knees and ankles, where the bone is covered only by the integument ; although the matter expelled from these parts is

Joints.

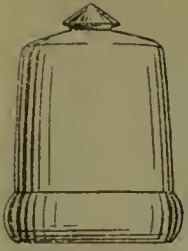


usually equal in quantity to that which comes from the soft tissues, the inconvenience to the patient is such as to preclude its adoption.

Local  
inflamma-  
tion.

In cases of erysipelas and any local inflammation, care is taken not to make the application near the seat of the trouble. But the effect of the treatment in distal parts is of marked benefit in all cases of this kind.

NOTE.—Pyonex Instruments, Pyonex Oil, and the accessories which complete the Pyonex Outfit, are sold by A. G. WORSLEY, Pharmaceutical Chemist, 135, Ladbroke Grove, London, W.



## THE PYONEX INSTRUMENT.



The accompanying plate is a representation of the instrument which is used for making the artificial pores in the integument. By removing the upper cap the points of the needles come into sight; and by removing the second cap the boss into which the needles are inserted is fully exposed. There is a spiral spring which passes through a hollow in the body of the instrument, and connects this boss with the handle at the other end.

Pyonex  
Instrument.

When the instrument is used, the top cap only is removed, and the upper end is placed on the integument and held by the left hand; a gentle pressure being exerted, which is sufficient to keep this integument slightly stretched.



The handle is then pulled out half an inch or a little more, and suddenly let go; a slight blow is thereby caused on the return stroke, when the needles come in contact with the epidermis. This blow is sufficient to produce minute pores in the epidermis, but the needles are not allowed to penetrate deep enough either to cause pain or to permit of very minute points of blood appearing on the surface.

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